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United States
Department of
Agriculture

Forest Service

Tongass
National
Forest

R10-MB-312

January 1996



Upper Carroll Timber Sale

Draft Environmental Impact Statement

Volume II: Appendices A-K

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ACRONYMS AND SYMBOLS

ADF&G	Alaska Department of Fish and Game
AHMU	Aquatic Habitat Management Unit
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
ASQ	Allowable Sale Quantity
BBF	One billion board feet
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFL	Commercial Forest Land
CFR	Code of Federal Regulations
CZMA	Coastal Zone Management Act of 1976
DBH	Diameter at Breast Height
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EVC	Existing/Expected Visual Condition
FEIS	Final Environmental Impact Statement
FSH	Forest Service Handbook
FSM	Forest Service Manual
GIS	Geographic Information System
IDT	Interdisciplinary Team
KPC	Ketchikan Pulp Company
KV	Knutsen-Vandenberg Act
LTF	Log Transfer Facility
LUD	Land Use Designation
LWD	Large Woody Debris (same as LOD)
MBF	One thousand board feet
MELP	Multi-Entry Layout Process
MIS	Management Indicator Species
MM	Maximum Modification
MMBF	One million board feet
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
P	Primitive
PR	Partial retention
R	Retention
RM	Roaded modified
RN	Roaded natural
ROD	Record of decision
ROS	Recreation Opportunity Spectrum
SHPO	State Historic Preservation Officer
SPM	Semi-primitive motorized
SPNM	Semi-primitive nonmotorized
TLMP	Tongass Land Management Plan
TRUCS	Tongass Resource Use Cooperative Survey
TTRA	Tongass Timber Reform Act
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
VCU	Value Comparison Unit
VQO	Visual Quality Objective
WAA	Wildlife Analysis Area

Acknowledgements

Front cover: By Cindy Ross Barber, 1992. The design illustrates the range of interconnected issues addressed in the EIS.

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Appendix A

Reasons For Scheduling the Environmental Analysis of the Upper Carroll Project Area



Reasons For Scheduling The Environmental Analysis Of The Upper Carroll Project Area

KPC Long-term Timber Sale Contract Offerings

This appendix explains why the Upper Carroll Project Area is scheduled for environmental analysis at this time.

Summary

Reasons for scheduling the Upper Carroll Project Area at this time, for detailed consideration of timber harvest under the Ketchikan Pulp Company Long-term Timber Sale Contract, may be summarized as follows:

1. The Upper Carroll Project Area is both within and outside the designated sale area for the Ketchikan Pulp Company Long-term Timber Sale Contract, and contains a sufficient amount of harvestable timber volume designated as LUD III or IV, and therefore appropriate for harvest under the Tongass National Forest Land Management Plan (TLMP). Available information indicates harvest of the amount of timber being considered for this project can occur consistent with Forest Plan Standards and Guidelines and other requirements for resource protection.
2. Areas with available timber inside the designated sale area will be necessary for harvest within the remainder of the Ketchikan Pulp Company Contract term (by 2004) in order to meet contract volume requirements. Effects on subsistence resources are projected to differ little according to which sequence these areas are subjected to harvest. Harvesting other areas on the Tongass National Forest with available timber is expected to have similar potential effects on resources, including those used for subsistence because of widespread distribution of subsistence use and other factors. Harvest of these other areas is foreseeable, in any case, over the forest planning horizon under either the existing or proposed revised Forest Plan.
3. Providing substantially less timber volume than required by the Ketchikan Pulp Company Contract in order to avoid harvest in the Upper Carroll Project Area or other project areas would not meet contract requirements and is otherwise not necessary or reasonable.
4. It is reasonable to schedule harvest in the Upper Carroll Project Area at the present rather than other areas in terms of previous harvest entry and access, level of controversy over subsistence and other effects, and the ability to complete the National Environmental Policy Act (NEPA) process and make timber available to meet contract requirements by the time it is reasonably necessary to do so. Other areas that are reasonable to consider for harvest in the near future are the subject of other project EISs that are currently ongoing or scheduled to begin soon.

More detail regarding the scheduling of the environmental analysis for the Upper Carroll Project Area is presented in this appendix in three subsections:

Ketchikan Pulp Company Contract Requirements

Contract Background

In 1951, the Forest Service and Ketchikan Pulp Company (APC) entered into a contract for sale and harvest of timber in Southeast Alaska for a 50-year period beginning in 1954 and ending in 2004. A primary function of this long-term contract was to "establish a new industrial enterprise which will be an important and significant step in the industrial development of Alaska" (Forest Service 1956).

The current management situation consists of a valid contract between the Forest Service and KPC, contract number A10fs-1042. This contract bestows rights and obligations on both parties. One obligation for the Forest Service is to provide the agreed upon volume from an identified contract sale area on the Tongass National Forest. Contract section B0.62 states in part "Forest Service shall seek to specify sufficient Offerings to maintain a Current Timber Supply in all Offering Areas that total at least three years of operations hereunder or until the contract termination date, whichever comes first, and which meets the the production requirements of Purchaser's manufacturing facilities."

"Current Timber Supply" is defined in the contract generally as timber which the Forest Service has specified according to Forest Service planning procedures and for which the NEPA process has been completed. The Forest Service specifies timber through approving in writing a timber "Offering" under the contract, comparable to an independent timber sale. This approval in writing is represented by issuance of an "A Division" contract document for the Offering. An EIS such as the Upper Carroll Project Area EIS may cover one or more of these such Offerings, which may be specified by the Forest Service and therefore added to the contract "Current Timber Supply" concurrently or sequentially after issuance of the Record of Decision for the Project. Generally, layout on the ground of roads and harvest units selected in the Record of Decision (ROD) will be completed for each Offering prior to issuance of the "A Division" approval document.

The Forest Service Timber Sale Preparation Handbook (FSH 2409.18 Chapter 10) details the process utilized to prepare timber sales. This process also guides the preparation of timber Offerings under the KPC Contract. The timber sale preparation process is summarized below. Included in brackets is information describing modifications to the process specific to the KPC Contract. The Handbook states:

The timber sale preparation process begins with the identification of the sale area and ends with the award of the timber sale contract [as described above, the process for the KPC Contract ends with the issuance of an "A Division" contract document for the Offering]. These activities pass through specific stages, called "gates", each of which requires specific outputs before proceeding to the next gate. . . Following are descriptions of work processes at each gate.

Gate 1. Begin sale preparation activities with scoping or position statement development. Identify the purpose and need for the project, public issues, interested outside parties, management issues, resource opportunities in the

sale area, a range of possible volume targets, and initial transportation system needs. . .

Gate 2. During the sale area design (environmental analysis) phase, develop alternative designs and analyze them for environmental effects. Concurrently, develop an analysis file to store the information that is gathered. Once a course of action is selected, develop a sale implementation plan that provides detailed instructions for field layout of all sale elements. The end product of the sale area design phase is the selection of the preferred alternative and signature of the decision notice by the official authorized to approve the project. . .

Gate 3. Activities leading to sale plan implementation include the data gathering and the on-the-ground marking, designating, and delineating needed to properly support the appraisal, the preparation of the contract, and post-award sale administration efforts. The sale passes through gate 3 when the field work is completed. . .

Gate 4. After gathering all necessary engineering design work, cruise (volume) information, logging costs, environmental protection costs, and other elements of the timber appraisal. . . [a final timber appraisal is prepared for the offering(s) and an "A Division" contract document is issued].

Contract provisions require KPC to harvest timber, construct and operate a mill for primary manufacture and to recruit labor from residents of Southeast Alaska. To fulfill this obligation KPC operates a sawmill and a pulp mill in Ketchikan and a sawmill in Metlakatla.

Section B0.61 of the Contract, *Timber Offering Schedule*, provides in part:

"To the extent authorized by law, Offering Areas may be identified for harvest outside the sale area, as needed to meet sale volume requirements."

The Upper Carroll Project Area lies both within and outside the "sale area".

Providing volume outside of the sale area is necessary at this time under the terms of the contract. Although KPC has indicated that the Forest Service has the discretion to consider obtaining volume from outside the designated sale area, they are interested in obtaining timber from other areas as well as the Upper Carroll Project Area. The criteria for modification in 36 CFR 223.112,113 have not been met, considering the information in the TLMP SDEIS, and this EIS. Congress in enacting the Tongass Timber Reform Act declined to modify the contract sale area, and by directing in section 301(e) of the statute that the Secretary of Agriculture report to Congress on the effects of eliminating the sale area, indicated an intent to reserve this decision to the legislature.

Why Providing Less Than The Contract Volume Was Not Considered In Detail

Congress in section 301(e) of the TTRA also indicated its intent to reserve to itself the question of providing less than the contract volume obligation to KPC. The Forest Service can expect a large monetary claim from KPC for not meeting contract volume obligations, for which there is no current funding. To the contrary, recent federal appropriations legislation has dedicated additional money to providing additional timber offerings to KPC and other Tongass National Forest timber purchasers. Volume from independent timber sales or sources outside the Tongass National Forest do not fulfill KPC Contract requirements. In

any case, there is not sufficient projected volume from other sources to meet KPC volume requirements.

Logs from Native Company lands cannot substantially meet the total needs of KPC. Owners of private timberland are able to sell their sawlogs on the export market for much higher prices than can be paid by local manufacturing. KPC is not prohibited under the Contract from purchasing timber from Native Companies or other sources, subject to the requirement that, ". . . at least three-fourths of the pulpwood requirements of the pulp manufacturing plant and other processing facilities operated in conjunction with this sale shall be cut from the areas covered by this agreement during the period prior to July 1, 1964, and during each 5-year operating period subsequent to that date." (KPC contract B0.53). There are no provisions in the Contract to offset such purchases by adjusting the Contract timber volume. Harvest from Native Company lands is decreasing, reducing potential pulp as well as sawlog availability from these lands (TLMP SDEIS page 3-339).

Canadian timber has been mentioned in the past as a source of supply for Southeast mills. Southeast Alaska pulp mills have purchased pulp logs from British Columbia (BC) in the past. However, the political and economic situation in British Columbia has changed to decrease the likelihood of substantial supply from this source. The June 1988 issue of British Columbia Lumberman, page W14, states that a substantial increase in demand for BC forest products is expected to decrease log exports. The Forest Minister stated: "Our main objective is to use BC timber to manufacture wood products in this province." It has been more recently stated that British Columbia is considering prohibiting log exports and is facing increased environmental pressures (TLMP SDEIS, page 3-339).

Trying to meet the long-term volume contractual obligations from outside the long-term timber sale boundaries would decrease the availability of timber for the independent timber sale program, including the Small Business Set Aside Program; obtaining a substantial portion of long-term contract timber from outside the designated sale areas would probably decrease the independent sale program by an equivalent amount under the current TLMP allowable sale quantity. Under the current Plan, an annual average of 271 MMBF net sawlog of the ASQ is needed to meet the long-term sale requirements, leaving an annual average of 179 MMBF net sawlog for the independent program.

The TLMP SDEIS (table 3-134, page 3-368) shows for the current Plan as amended by the TTRA (Alternative C) the contribution to ASQ net sawlog (MMBF) by Allotment Area. Contingency Areas of Allotment E, F, and G of the KPC contract area contribute 125 MMBF annual average (28%) to the ASQ. Designating any part of this volume for the long-term sale could directly reduce the portion of the ASQ available for the independent program. The timber volume included in the action alternatives in the Upper Carroll Project EIS and if scheduled from this area in the TLMP for the long-term contract could affect the Small Business Administration timber sale program agreed to with the SBA of 80 MMBF. Section 105 of the Tongass Timber Reform Act reflects Congressional intent that the SBA program continue.

Lack of an adequate timber supply to support these programs could affect the existing mill infrastructures and employment. The TLMP SDEIS (table 3-118, page 3-337) shows that lumber mill capacity for independent operators is about 220 MMBF annually (380 MMBF minus the Wrangell and KPC Sawmills). During good market conditions, the short term sales program has purchased up to 174 MMBF and harvested up to 149 MMBF annually which translates into about 67 percent of the mill capacity (TLMP SDEIS, table 3-114, page 3-325). Therefore, under good market conditions, the existing infrastructure can absorb the available supply. Elimination of short term sales under the independent

and set-aside programs would translate into a loss of between 815 and 1144 timber-related jobs (TLMP SDEIS page 3-370, 3-610).

Current Timber Supply And Volume Needs

Any Ketchikan Pulp Company (KPC) long-term contract offerings implemented through this Project will help meet KPC long-term contract timber supply needs. The KPC timber sale contract (USDA Forest Service. 1951. Contract Number A10fs-1042), includes the following provisions:

B0.61 Timber Offering Schedule. Each year prior to February 15, Forest Service after consultation with purchaser shall develop a tentative Offering schedule based upon the Tongass National Forest Land and Resource Management Plan, which shall display Offering Areas and timber volumes proposed for harvest, and the expected NEPA process commencement and completion date for making any additional Offerings under the terms of this contract. To the extent authorized by law, Offering Areas may be identified for harvest outside the Sale Area, as needed to meet sale volume requirements. The tentative schedule shall list sufficient timber volume and schedule commencement of the NEPA process by Offering Area or Areas to provide Purchaser a Current Timber Supply sufficient for at least three years of operations hereunder or until the contract termination date, whichever occurs first, adjusting for the provisions of B0.63 and B6.36. In developing the schedule, Forest Service will consider the production requirements of Purchaser's manufacturing facilities.

B0.62 Specifying Offerings for Harvest. Based upon the tentative schedule and NEPA process, and consistent with timber sale planning, management requirements, and environmental assessment procedures for independent Tongass National Forest timber sales, Forest Service after consultation with Purchaser and completion of the NEPA process, shall specify any additional Offerings. Forest Service shall seek to specify sufficient Offerings to maintain a Current Timber Supply in all Offering Areas that totals at least three years of operations hereunder or until the contract termination date, whichever occurs first, and which meets the production requirements of Purchaser's manufacturing facilities.

The maximum average annual rate per year at which KPC is generally allowed to harvest is 192.5 MMBF under long term contract section B0.52. KPC's average harvest rate, obtained from contract records, during the five-year period from March 1, 1989 through February 28, 1994 was 185.4 MMBF per year. Therefore, a three year supply of timber for KPC's operations under the contract is currently estimated to range from 556.2 to 577.5 MMBF.

As of June 1, 1995, KPC had a current timber supply of approximately 193 MMBF. The maximum volume of timber that can be provided to KPC from within the contract area in the remainder of fiscal year 1995 is about 93 MMBF. The maximum amount that can be provided to KPC from within the contract area during 1996 is expected to be about 174.1 and during 1997 about 155.9 MMBF. Assuming the maximum annual average harvest rate of 192.5 MMBF, a timber supply of 93.5 MMBF would be available at the end of 1995, 75.1 MMBF at the end of 1996, and 38.5 MMBF at the end of 1997. These levels would fall well short of meeting the objective of specifying a three-year supply for operations under the contract, considering on-going harvest at either the maximum or historic rates noted above.

There have been suggestions that layout and other actions could be expedited to increase the amounts available from the contract area through 1997. However the current assessment is that further expediting layout is not feasible, even with significant increased funding, while maintaining a reasonable assurance of quality work. The Forest Service has made efforts to accelerate the preparation of new offerings within the contract area. At present, about 852.7 MMBF in new timber projects are being planned within the contract area over the duration of the contract, beyond what is projected in the 1995 - 1997 figures presented above. However, because of the amount of time required to prepare new offerings in accordance with applicable laws, none of this volume is projected to be available until after fiscal year 1997. It remains to be seen how much of the volume in preparation will be cleared through the NEPA process and when it will be available.

Consequently, additional timber from outside the KPC contract area is needed in order to meet the three-year timber supply objective. Sale offerings currently scheduled, undergoing NEPA evaluation, or at some other stage in the preparation process are projected to be needed to help meet the KPC long-term contract and independent sale program's three-year supply objectives. If any currently planned independent sales were converted to KPC contract offerings, equivalent volume currently planned for KPC contract offerings would then need to be substituted as independent sale offerings. The first offerings from the Upper Carroll Project Area could be made available in 1997 to help meet either three-year supply objective.

Tongass Land Management Plan

TLMP As Amended Winter 1985-86

Chapter 1 of this EIS includes an explanation of how this project relates to the Tongass Land Management Plan. That section describes the Land Use Designations (LUDs) which allocate land areas to different types of management. Chapter 1 also explains that these LUDs were assigned to land areas known as Value Comparison Units (VCUs), and that one or more contiguous VCUs were formed into Management Areas (MAs). This section also describes the management emphasis for the Management Areas likely to be affected by the Upper Carroll Project.

The Tongass Land Management Plan, As Amended Winter 1985-1986, not only detailed Management Direction/Emphasis for each Management Area, it also scheduled specific Management Activities for specific time periods. In particular it scheduled timber sale preparation activities for 1985-89 and 1990-94. Table 2 displays the Management Areas scheduled for timber sale preparation during 1990-94.

Table 1
TLMP, As Amended Winter 1985-86, Activity Schedule

Management Area	Name	Years Scheduled	Activity Scheduled
K32	West Revilla	90-94	Timber Sale Prep
K35	Carroll-Thorne	90-94	Timber Sale Prep

The Allowable Sale Quantity (ASQ), calculated in TLMP and used in Congressional deliberations and decisions on ANILCA, assumed harvest in all LUD III and LUD IV VCUs, in compliance with the Southeast Area Guide, on a three entry, 100 year rotation. Some selected areas were scheduled for 4 entries in 120 years (LUD IV) and 6 entries in 200 years (LUD III) for visual considerations. A three entry rotation assumes the first entry will be made within 30 to 40 years. If areas are not entered, and the ASQ is harvested, other areas will have to receive a heavier entry, resulting in a pattern of high percentage first entries being established, and therefore creating conditions under which the three-entry rotation may not be achievable.

The TLMP as amended also scheduled as anticipated management outputs from the Ketchikan Area timber volume ranging from 195.0 million to 220.3 million annually (Tongass Land Management Plan Amended Winter 1985-86, page 5).

Supplemental TLMP Revision Draft EIS (TLMP SDEIS)

1. Sufficient Volume for KPC Contract Needs in TLMP SDEIS.

The TLMP SDEIS Chapter 3 section on timber (pages 3-354 and 355) provides the following summary statements in terms of the timber supply and the long-term timber sale programs.

If utility volume is included, Alternatives B, C, D, and P would meet or exceed the projected demand for National Forest timber (400 MMBF). Alternative A would provide 89 percent of the projected demand.

All of the first-decade Allowable Sale Quantity (ASQ, sawlog) in Alternative A would be needed to satisfy the long-term contracts; Alternative B would need 82 percent of the ASQ; Alternative C, 69 percent; Alternative D, 66 percent; and Alternative P, 75 percent.

These statements show that timber supply exceeds the level which is required to satisfy the long-term timber sale contracts (both APC and KPC). The data to support these statements is displayed in table 3-127 on page 3-355 and table 3-135 on page 3-371 of TLMP SDEIS. Table 3-135, in particular, shows the Long-Term and Short-Term Sales program volumes for the decade.

TLMP SDEIS also presents a discussion of timber supply within the KPC long-term contract sale area. As of October 1990 (the date of the TLMP SDEIS analysis), the remaining KPC Long-term Timber Sale Contract volume requirement was 2,443 MMBF, including utility (TLMP SDEIS, table 3-116, page 3-329, table 3-133, page 3-366). TLMP SDEIS alternatives A, B, C, D, and P provide, respectively, 3,800 MMBF, 4,180 MMBF, 5,930 MMBF, 5,920 MMBF and 5,480 MMBF, including utility, from the KPC designated sale area (allotments E, F, and G (TLMP SDEIS, table 3-133, page 3-366). All alternatives in the TLMP SDEIS indicates more than sufficient timber remaining available in the designated KPC sale area to meet remaining contract volume requirements, consistent with resource protection requirements and other constraints projected in the document.

Analysis in TLMP SDEIS is related to suitable-available acres. These are acres of forest that are identified as suitable for timber harvest and which are assigned management prescriptions within the TLMP SDEIS that allow consideration of timber harvest. For each alternative, TLMP SDEIS analysis confirms that the identified suitable-available acres contain more than enough potentially available timber within the sale area to meet the remaining volume commitment. These figures appear in table 3-134, pages 3-368 and 3-369, TLMP SDEIS and are summarized in the following table.

Table 2
Timber Volume Available Within The Contract Area

Alt.	Allotment Area	Suitable-Available (Acres)	Old Growth Standing Vol (MMBF)
A	E-Primary	141,194	2,098
	F-Primary	38,960	698
	G-Primary	101,493	1,499
	Rest of E	39,166	826
	Rest of F	129,743	2,891
	Rest of G	157,426	2,806
		----- 607,982	----- 10,818
B	E-Primary	154,484	2,408
	F-Primary	42,193	793
	G-Primary	122,586	1,868
	Rest of E	45,926	984
	Rest of F	147,347	3,291
	Rest of G	153,245	2,678
		----- 665,781	----- 12,022
C	E-Primary	169,584	2,772
	F-Primary	47,769	915
	G-Primary	139,423	2,223
	Rest of E	75,551	1,702
	Rest of F	234,232	5,367
	Rest of G	227,707	4,407
		----- 894,266	----- 17,386
D	E-Primary	179,257	2,931
	F-Primary	49,889	939
	G-Primary	145,925	2,356
	Rest of E	47,065	1,010
	Rest of F	213,401	4,853
	Rest of G	240,790	4,676
		----- 876,327	----- 16,765
P	E-Primary	161,578	2,586
	F-Primary	45,262	859
	G-Primary	135,737	1,401
	Rest of E	65,954	1,462
	Rest of F	217,768	4,981
	Rest of G	199,856	3,809
		----- 826,155	----- 15,098

Furthermore, TLMP SDEIS displays the number of acres of tentatively suitable lands that are scheduled to be harvested over the planning horizon for each Management Area (TLMP SDEIS, table 3-138, page 3-378). This table indicates that the scheduling of the Upper Carroll Project Area and other project areas within the KPC sale area to meet contract volume requirements over the next several years is anticipated. In addition, this table shows that there are adequate suitable acres in these Management Areas, scheduled to be harvested, to provide that volume. A portion of table 3-138 is displayed below in table 3. It displays, for Alternative P, the scheduled suitable acres by Management Area. Table 3 is similar to table 1 which showed the Management Areas scheduled for timber sale preparation during 1991-95. A comparison of these two tables indicates that the Management Areas identified as appropriate for timber harvest activities in the existing TLMP (as amended winter 1985-86) are also identified as appropriate in alternative P of TLMP SDEIS.

Table 3
TLMP SDEIS Alternative P Scheduled Acres (selected Management Areas)

Mgmt. Area	Name	Acres Sched- uled	Percent Of MA	Total MA Acres
K32	West Revilla	63,083	35.7	176,716
K35	Carroll-Thorne	36,861	38.1	96,875

2. Cumulative Effects

The TLMP SDEIS considers the cumulative effects for forest-wide acres managed for timber production for both the long-term and short-term timber sale programs. These effects are discussed on pages 3-371 through 3-381. Cumulative effects for other resources are discussed at the end of their respective sections.

Analysis points to the need to schedule harvest in VCUs assigned management prescriptions which permit consideration of timber harvest, including the VCUs within the Upper Carroll Project Area. These VCUs in the current Forest plan, and in the draft revised Forest Plan would be needed to help meet the Tongass National Forest Allowable Sale Quantity, and also the contractual timber volume needs for the KPC Long-term Timber Sale. The forest-wide cumulative effects analysis in the TLMP SDEIS supports the conclusion that this harvest can be accomplished within existing and proposed revised TLMP standards and guidelines and other requirements for resource protection.

3. Subsistence

With the passage of the ANILCA, Congress recognized the importance of subsistence resources to rural residents of Alaska. In particular, prior to any disposition of public lands, an agency must first complete a subsistence effects evaluation, including consideration of the availability of other lands (ANILCA 810 (a)).

Based on a review of available harvest volumes for each VCU in the KPC contract area, it appeared that in order to meet contract volume commitments, most of the LUD III and IV

VCUs would need some level of harvest prior to the end of the KPC contract in 2004. A tentative offering schedule was developed and approved for implementation based on this analysis. In short, almost all LUD III and IV VCUs in the KPC Long-term contract area would be scheduled for harvest within the next 10 to 15 years, indicating a level of impact to all subsistence use areas. However, the most significant impacts on the subsistence resource habitat would not occur until 20 to 30 years after the timber harvest when the second growth canopy closes. When those impacts to subsistence resources are viewed from a reference point 20 years in the future, the particular importance of which areas are scheduled first during a 5-year period appears to be minor.

In considering communities that may be most affected by any proposed timber harvest in the Upper Carroll Project Area, Metlakatla, Meyers Chuck, Saxman, Wrangell, Thorne Bay, and Ketchikan appear to have the strongest cultural and subsistence ties to the area. Each community has its own level of reliance on subsistence as well as its own level of reliance on the Upper Carroll Project Area for supplying subsistence resources. The following information about each communities subsistence use is a summary of more detailed information provided in chapter 3 of the Upper Carroll Project EIS.

Metlakatla Boat access areas adjacent to or in the immediate vicinity of the Upper Carroll estuary are some of the subsistence use areas for the community.

Meyers Chuck Boat access areas adjacent to or within the immediate vicinity of Neets Bay located in the Northwest portion of the Project Area is the subsistence use area used on a limited basis by the community.

Saxman Boat access areas adjacent to or in the immediate vicinity of the Upper Carroll estuary as well as boat access areas adjacent to or within the immediate vicinity of Neets Bay located in the Northwest portion of the Project Area are some of the subsistence use areas for the community.

Wrangell Boat access areas adjacent to or within the immediate vicinity of Neets Bay located in the Northwest portion of the Project Area is the subsistence use area used on a limited basis by the community.

Thorne Bay Boat access areas adjacent to or within the immediate vicinity of Neets Bay located in the Northwest portion of the Project Area is the subsistence use area used on a limited basis by the community.

Ketchikan Boat access areas adjacent to or in the immediate vicinity of the Upper Carroll estuary as well as boat access areas adjacent to or within the immediate vicinity of Neets Bay located in the Northwest portion of the Project Area are some of the subsistence use areas for the community.

As a result of several considerations, including the availability of subsistence resources in undisturbed areas of Revillia Island, including LUD I and LUD II areas within or adjacent to the Project Area (such as the Naha LUD II Area and the Cleveland Peninsula), the relative independence of most communities from subsistence resources in the Project Area, as well as analysis contained in the Tongass Land Management Plan SDEIS, the Forest Service determined to schedule an environmental analysis of the Upper Carroll area. Other projects including Sea Level, North Revilla, Port Stewart, Vixen Inlet, Central Prince of Wales, Lab Bay, Ratz Harbor, Heceta Island, and Chasina are being implemented, or, will undergo environmental analysis within the next 3 to 5 years.

Extensive forestwide cumulative effect analysis has been included in the TLMP SDEIS (TLMP SDEIS pages 3-628 through 3-765). That analysis, and the tables of data shown in appendix K of TLMP SDEIS are incorporated by reference into this document. The data in appendix K and L indicates subsistence hunting of deer and other uses in virtually every area of the Tongass with substantial quantities of harvestable timber. The following information is extracted directly out of the Tongass Land Management Plan Revision, Supplement to the Draft Environmental Impact Statement, pages 3-762 and 3-763:

In conducting the subsistence evaluation it is determined that, in combination with other past present and reasonably foreseeable future actions, none of the alternatives would pose a significant possibility of significant restriction for salmon, other finfish, marine mammals, invertebrates, plants, mountain goat, moose, waterfowl, sea birds, or other small game. Together these resources account for an average of 79 percent of the total harvest of subsistence resources (Kruse and Muth, 1990).

In considering the impacts of future actions that may take place under the proposed alternatives on deer, two types of analysis was conducted. Potential effects were first determined for those WAAs where residents have successfully harvested deer, then for those WAAs where residents have ever gone to harvest deer. Both 10 percent and 20 percent harvest levels of the deer population were used.

Considering only those WAAs where residents successfully harvested deer and assuming a harvest level of 10 percent of the population, there would be sufficient deer in all alternatives for the next 50 years to meet all subsistence needs for all communities except Gustavus, Hoonah, Kake, Pelican, Sitka, and Yakutat (appendix K). For these communities, there would be insufficient habitat capability to support harvest by all subsistence users (regardless of the community of origin). However, at 20 percent of the population, all subsistence needs for these communities would be met by all alternatives for the next 50 years (appendix K).

If instead of considering only those WAAs in which hunters were successful, we consider all WAAs ever hunted by community residents, then there would be sufficient deer habitat capability to support all subsistence hunters in the WAAs used for hunting by all subsistence communities except for Pelican and Gustavus. If instead of assuming a 10 percent harvest level, a 20 percent harvest level is used, there would be sufficient habitat capability to support all subsistence harvest in all WAAs used for hunting by all subsistence communities.

As a result of the analysis of the impacts of projects that would be permissible under each of the alternatives considered for adoption in the Forest Plan, it has been determined that all of the alternatives, if all permissible projects were fully implemented, have the potential to impact subsistence uses of deer, brown bear, and furbearers (specifically martens) due to potential effects of projects on abundance/distribution, and competition.

The analysis shown in chapter 3 of this Project EIS is supported by the analysis shown above in the TLMP SDEIS. The conclusion stated above, "it has been determined that all of the alternatives, if all of the permissible projects were fully implemented, have the potential to impact subsistence uses of deer. . .", supports the conclusion that any environmental analysis area within the Tongass would have a similar chance of having a significant possibility of a significant restriction on subsistence resources for Sitka Black-tailed deer, and other mammals.

The analysis for ANILCA section 810 are shown in the Subsistence section of chapter 3, in this EIS. The determinations made from the ANILCA section 810 analysis and findings will be a part of the Record of Decision for this project.

Forest Plan Implementation

Review of Available Volume

A review was conducted of each VCU within the designated sale area for available volume. This analysis was based on computer inventories and Allowable Sale Quantity (ASQ) calculations from TLMP Draft Revision (1991a).

The review used the following guidelines to identify likely areas to schedule for environmental analysis in the near future:

- (1) Evaluate by area the total available volume within the designated sale area. Between 1991 and 1993, there is a need to identify a potential harvest of 700 MMBF.
- (2) Identify a tentative operating schedule which addresses volume to be offered from the Ketchikan Area.
- (3) Prepare a schedule of environmental analysis areas which shows how the Ketchikan Area will meet the tentative operating schedule from 1991 through the end of the contract. This schedule must provide a minimum of 615 MMBF 'current timber supply' through the end of the contract.

The results of the first step by the working group analysis are presented in table 5. The results of this volume review, further supported by TLMP revision information, provided the basis for scheduling the next series of environmental analyses.

Table 4
Available Volume By Project In The KPC Contract Boundary

Project Area	MA's in Project Area	(MMBF)
Central Prince of Wales	K03 (Portion), K07, K08, K09, K10	267
Ratz	K09 (Portion)	10
Luck Lake	K08 (Portion), K09 (Portion)	60
Tuxekan	K07	15
Lab Bay	K01, K03 (Portion)	85
North POW	K01, K03	90
Polk Inlet	K17, K18	113
Chomly	K18, K19	80
North Revilla	K32 (Portion)	200
Sea Level	K35	20
Control Lake	K08, K14, K15	187
Upper Carroll	K32 (Portion), K35 (Portion)	70
Vixen Inlet	K29	60
Port Stewart	K30	105
Lower Carroll	K34	40
South Pow	K28	35
Chasina	K24	40
Moir	K25	70

Analysis Area Reviews

For each area identified as having sufficient volume available to consider for further environmental analysis at this time, a review was conducted to decide which areas to schedule first, considering the current TLMP and proposed revised TLMP schedule, and other factors described below. The results of this review and supporting reasons for each area appear below:

Central Prince of Wales - This project area is located within TLMP management areas K03, K07, K08, K09 and K10. The area has had extensive harvesting in the past. No additional log transfer facilities (LTF's) are required to harvest timber in this area. The majority of the road system is already in place, only limited additional road construction would be required. The area is entirely within the primary sale area. This area was given the highest priority due to it's location within the primary sale area, ease of access, prior harvest and no additional LTF construction. The environmental analysis has been completed.

North Revilla - This project area is located within TLMP management area K32. The area has had extensive harvesting in the past. It is located within the primary sale. A large amount of new road construction will be needed in the area. Road construction into the area is difficult due to steep terrain and unstable slopes. Nine LTFs will be required to access the area, of which three will require new construction. The area was given high priority since it is located within the primary sale area, has had prior harvest and road construction, and a logging system transportation analysis had already been completed for the area. It was not given highest priority due the requirement of three new LTFs and difficult road construction. The environmental analysis has been completed.

Polk Inlet - This project area is located within TLMP management areas K17 and K18. The K17 portion of the area is located within the primary sale area. The area has had extensive harvesting in the past. Roads have been developed previously into the area but construction is difficult due to the terrain. A logging system transportation analysis was completed for the area as part of the 1989-1994 EIS. Three new LTF's will be required to enter the area but they have already been approved for construction under the 1989-1994 EIS and their required permits have been acquired or in process. The area was given a high priority since it has a large portion located within primary sale area, has had previous harvest, and has had prior road development. The area was not given highest priority due to LTF construction and difficult access. The environmental analysis has been completed.

Lab Bay - This project area is located within TLMP management area K01 and K03. The area has had extensive harvesting in the past. One additional LTF will be required, other timber will utilize two existing LTF's. The vast majority of timber will have to pass through these two existing LTFs. The limited number of additional LTF's in the area could create a bottle neck getting wood from the field into the water. The area was given a high priority since it is in the primary sale area, has current road access, and has had previous harvest. It was not given highest priority due to a limited number of LTF's to put logs into the water.

Sea Level - This project area is located within TLMP management area K35. The area has had extensive harvesting in the past. The area is within the KPC long term contract, however it is outside the primary sale area boundary. Road construction is difficult in the area but no new LTF's are required to access the timber. This area was given a moderate priority for scheduling due to being within the timber sale contract and not requiring any new LTF's.

Control Lake - This project area is located within TLMP management area K08, K14 and K15. The area has had extensive harvesting in the past. No additional log transfer facilities (LTF's) are required to harvest timber in this area. The majority of the road system is already in place, only limited additional road construction would be required. The area is within the long-term contract area, but not within the primary sale area portion. This area was given a moderate priority since it had ease of access, prior harvest and no additional LTF construction but was not within the primary sale area.

Upper Carroll - This project area is located within TLMP management area K32. The area has had limited harvesting in the past. The area is within the KPC long term contract, however it is mostly outside the primary sale area boundary. Road access in the area is difficult. One new LTF will be required. Road construction associated with this project may help complete the linkage for the transportation utility corridor planned for the area. This area was given a moderate priority for scheduling despite the potential transportation utility corridor due to difficult access and only being partially within the primary sale area.

Ratz - This project area is located within TLMP management area K09. The area is within the Central Prince of Wales project area and has had extensive harvesting in the past. No additional LTF's are required to harvest timber in the area. The area is within the primary sale area and can concentrate harvest in areas that were not available, primarily due to adjacency, in the original project. This project area was given a lower priority for scheduling primarily due to low potential volume.

Luck Lake - This project area is located within TLMP management areas K08 and K09. The area is within the Central Prince of Wales project area and has had extensive harvesting in the past. No additional LTF's are required to harvest timber in the area. The area is within the primary sale area and can concentrate harvest in areas that were not available,

primarily due to adjacency, in the original project. This project area was given a lower priority for scheduling primarily due to low potential volume.

Tuxecan - This project area is located within TLMP management area K07. The area is partially within the Central Prince of Wales project area and includes Tuxecan Island. It has had extensive harvesting in the past. Tuxecan Island has extensive karst development. No additional LTF's are required to harvest timber in the area. The area is within the primary sale area and can concentrate harvest in areas that were not available, primarily due to adjacency, in the original project. This project area was given a lower priority for scheduling primarily due to low potential volume.

North POW - This project area is located within TLMP management areas K01 and K03. The area is within the Lab Bay project area and has had extensive harvesting in the past. No additional LTF's are required to harvest timber in the area. The area is within the primary sale area and can concentrate harvest in areas that were not available, primarily due to adjacency, in the original project. This project area was given a lower priority for scheduling primarily due to low potential volume.

Chomly - This project area is located within TLMP management areas K18 and K19. The area has had limited harvesting in the past except K18 which is in the Polk Inlet project area. Additional LTF's would be required to harvest timber in the area. The area is outside the primary sale area. Recreation use is heavy and developmental costs for timber sales will be very high in relation to relatively low timber outputs. This project area was given a lower priority for scheduling.

Vixen Inlet - This project area is located within TLMP management area K29. The area has had limited harvesting in the past. There is potentially a large amount of volume available in the area, although it is somewhat scattered. This will require a high ratio of miles of road construction per MBF of timber harvest. The area is within the KPC long term contract, however it is outside the primary sale area boundary. The project is on Cleveland Peninsula which has important wildlife and recreation values. There is currently no road access into the area. There are no existing LTF's and one new LTF would be required. This area was given a moderate priority for scheduling due the large amount of potential volume and since it is within the long term sale boundary. It was not given a high priority since it is not within the primary sale area and has high recreation and wildlife values.

Port Stewart - This project area is located within TLMP management area K30. The area has had limited harvesting in the past. There is potentially a large amount of volume available in the area, although it is somewhat scattered. This will require a high ratio of miles of road construction per MBF of timber harvest. The area is within the KPC long term contract, however it is outside the primary sale area boundary. The project is on Cleveland Peninsula which has important wildlife and recreation values. There is currently no road access into the area. There are no existing LTF's and one new LTF would be required. This area was given a moderate priority for scheduling due the large amount of potential volume and since it is within the long term sale boundary. It was not given a high priority since it is not within the primary sale area and has high recreation and wildlife values.

Lower Carroll - This project area is located within TLMP management area K34 and K35. The area has had limited harvesting in the past. The area is within the KPC long term contract, however it is outside the primary sale area boundary. The area was recently analyzed as part of the Shelter Cove EIS. As part of that EIS a logging system transportation analysis was developed for the area. Remaining volume potentially available for harvest from this area is low. This area was given a low priority for scheduling due to not being in

the primary sale area, low amount of potential volume, and having been recently analyzed as part of another EIS.

Moir - This project area is located within TLMP management area K25. The area has had limited harvesting in the past and is outside the primary sale area. The area would require the construction of new LTF's and road construction is expected to be difficult. The area is used heavily for recreation and subsistence purposes. The area is expected to yield low volumes of timber and was given a lower priority for scheduling.

South POW - This project area is located within TLMP management area K28. The area has had extensive harvesting in the past. The area is within the KPC long term contract, however it is outside primary sale area boundary. There is no existing logging system transportation analysis available for the area. The area would require the construction of three new LTF's. Road construction in the area would be very difficult. The quality and quantity of timber in the area is not very high. The result is that timber harvest in the area is likely to be economically marginal. As a result of these factors, this area was given a low priority for scheduling.

Results of Analysis

Upon completion of the above analysis, four project areas (Central Prince of Wales, North Revilla, Polk Inlet and Lab Bay) were identified and scheduled for environmental analysis first. The four timber projects were initiated which had a high priority and were within the KPC "Primary Sale Area". The KPC contract provides direction to seek to find timber supplies within the Primary Sale Area before seeking volume within contingency areas. In addition to being within the Primary Sale Area, these four projects reflected the highest scheduling priority to provide volume that could contribute to timber supply needs. The environmental analysis for three of the four projects are completed and a draft EIS has been published for the fourth (Lab Bay). Environmental analysis has been initiated for several of the moderate and lower priority project areas including Upper Carroll.

In addition to project areas relative ability to provide timber, other factors considered in making this volume determination for the Upper Carroll project included: (1) this harvest level is consistent with the sale schedule in the TLMP (1979a, as amended); (2) sufficient volume has been determined to be available in the project area; (3) there is a limited road network in place; (4) the number and location of Log Transfer Facilities (LTF's) is sufficient to handle this volume of timber within a three-year time frame; (5) there are existing logging camps within the area to handle this volume; and (6) the current Forest Plan (TLMP 1979a, as amended) calls for harvest in this project area.

Comments recieved during the Environmental Impact Statement process for the first four projects expressed a concern regarding the sustainability of the timber harvest levels. The concern was made for the Ketchikan Area as whole, as well as the distribution of the harvesting within the Area. To address these concerns additional analysis was performed to estimate Ketchikan Area wide timber harvest levels over the next 50 years by Management Area. This analysis was done by Management Area to give a spatial indication of where the harvests would occur. It was done for 50 years since this is the estimated period until the second growth produced by earlier cutting would become available for harvest once again. This analysis also assumes that; 1) price increases for wood products will occur resulting in making economically marginal lands possible to harvest, and 2) there will be no further reductions in the suitable land base due to legislation, Forest Planning, or other factors. The analysis indicates that although timber harvest levels can be sustained Ketchikan Area wide, there will be some shifts through time as to where that harvest incurs.

Appendix B

Units Greater than 100 Acres



Appendix B
Harvest Units Over 100 Acres in Size
By Alternative

NFMA regulations provide that 100 acres is the maximum size of created openings to be allowed for the hemlock-Sitka spruce forest type of coastal Alaska, unless excepted under specific conditions. The Alaska Regional Guide (page 3-20) provides---

Recognizing that harvest units must be designed to accomplish management goals, created openings may be larger where larger units will produce a more desirable contribution of benefits. Factors to be considered to determine when a larger size may be permitted are:

1. Topography
2. Relationship of units to other natural or artificial openings and proximity of units
3. Coordination and consistency with adjacent management areas
4. Effect on water quality and quantity
5. Visual absorption capacity
6. Effect on wildlife and fish habitat
7. Regeneration requirements for desirable tree species, based upon latest research
8. Transportation and harvesting system requirements
9. Natural and biological hazards to the survival of residual trees and surrounding stands
10. Relative total costs of preparation, logging, and administration of harvest cuts

Where it is determined by the interdisciplinary team that exceptions to the size limitation are warranted, the actual size limitation of openings may be up 100 percent greater for factor 9 and up to 50 percent greater for all other factors with the approval of the Forest Supervisor.

Exceptions to the 100 acre size limit in excess of 50 percent greater (100 percent greater for factor 9) are permitted on an individual timber sale basis after 60 days public notice, and review and approval by the Regional Forester.

The following tables display the units by alternative which exceed 100 acres in size. The reasons for exceeding the size limits are also displayed.

Units Over 100 Acres in Size

HARVEST UNIT#	ACRES	REASON	ALTERNATIVE NUMBER			
			2	3	4	5
16	114	1,8,10	2	3	4	5
3/27/28	112	1,8,10		3		
66/70	110	1,8,10			4	
* 4/5/86	193	1,4,6,8,10				5

Over 100 Acres by Alternative			1	2	2	2

Notes: The combination of units 4, 5 and 86 occurs in Alternative 5.

Alternative 5 makes an entry into the west side of Carroll Creek. Under this alternative all available timber would be harvested this entry. This would allow the bridge to be pulled and the road closed permanently without any need to re-open it for the remainder of the rotation. This would minimize cumulative effects from sedimentation on fisheries and disturbance to wildlife.

Appendix C

Riparian Area Prescriptions



RIPARIAN AREA PRESCRIPTIONS

RP LUDs

The Riparian Area Land Use Designation (RP) is applied where more development-oriented riparian management would otherwise normally occur. At a minimum, the land area encompassed by this designation includes: 1) the riparian area required to meet the National Forest Management Act's implementing regulations for fish habitat and water quality; and, 2) the land area in which the commercial timber harvest restrictions of the Tongass Timber Reform Act (P.L. 101-931) are applied. Risks of effects to riparian resources are reduced by extending the Riparian Area Land Use Designation to beyond the area required by law.

Goals

To maintain riparian habitat for fish and other riparian-associated species and resources.

To meet the requirements of the National Forest Management Act and the Tongass Timber Reform Act for the protection of fish habitat and/or water quality.

Objectives

To emphasize the maintenance and improvement of fish habitat and populations by integrating aquatic and terrestrial ecosystems management.

Manage the habitat for riparian-associated wildlife species in Class I stream and lake areas to achieve old-growth characteristics.

Prohibit commercial timber harvest within 100 feet of either side of Class I streams, and within 100 feet of those Class II streams which flow directly into Class I streams. Allow timber harvest in other areas where it does not conflict with the maintenance or improvement of riparian-associated resources.

Objectives for fish habitat management:

- Maintain or improve fish habitat capability;
- Maintain natural stream bank and stream channel processes;
- Maintain natural and beneficial quantities of large woody debris over the short- and long-term;
- Maintain water quality to provide for fish production;
- Maintain optimum water temperatures for salmonids;
- Maintain or improve primary or secondary stream biological production in second-growth forests;
- Maintain fish passage through stream crossing structures.

Accommodate recreation facilities and uses associated with water-related activities which avoid adverse effects on water quality and riparian shorelines.

Desired Future Condition

Riparian areas throughout the forest provide high-quality habitat for fish and riparian-associated wildlife species. A wide variety of vegetative conditions and

types are present, benefiting a variety of species; also provided are reserve trees for wildlife, large trees for brown bear bedding areas, and associated waterfowl habitats. The areas also provide wildlife travel corridors.

Timber Harvest Prescription

The following tables provide the standards and guidelines for timber harvest activities. Distances are in slope distance measured from the ordinary high water mark (see glossary). Distances shown are for windfirm leave strips; greater distance may be required to achieve reasonable assurance that windthrow as the result of adjacent harvest activity will not occur within the windfirm distance. To design windfirm leave strips, consider conditions such as soils, local wind patterns, tree height and size, and other site-specific factors. Forest-wide and Land Use Designation-wide standards and guidelines apply for each channel process group.

Harvest Definitions

"no commercial timber harvest" - A standard that means commercial timber harvest shall be prohibited (Tongass Timber Reform Act of 1990)).

"no programmed commercial timber harvest" - A guideline and means that no timber harvest will be scheduled, but that unprogrammed commercial timber harvest could be allowed. Among other reasons, unprogrammed commercial timber harvest may include timber sold as part of a salvage sale, for insect and disease abatement purposes, and for specialty wood products.)

Flood Plain Process Group
(Channel types FP1, FP2, FP3, FP4, FP5)

Stream Class

	I
Objectives	<ul style="list-style-type: none"> - Maintain or improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species - Maintain long-term supplies of large woody debris sources within the process group - Allow no activities which may cause floodplain destabilization
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet in width on each side of all channel types - Allow single tree selection harvest within 100 to 200 feet in width on each side of FP3 channel types not associated with other channel types - Allow no programmed commercial timber harvest within 100 to 200 feet in width on each side for remainder of channel types - Consider all harvest methods, on a case-by-case basis, in the riparian area beyond 200 feet if the riparian area is greater than 200 feet
Harvest Rate	<ul style="list-style-type: none"> - Beyond 100 feet from the stream, strive to maintain 90% of the normal basal area with trees 16"± dbh within areas with no programmed commercial timber harvest.
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest" areas unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives
Roading	<ul style="list-style-type: none"> - Locate roads in this process group only when other reasonably feasible routes do not exist.

NOTES:

- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed, but will be limited to uneven-aged silvicultural systems.
- Commercial timber harvest guidelines beyond 100 feet may vary, based on site-specific analysis, but must meet process group objectives.
- Beyond 100 feet of the stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g., for bridge stringers, totem poles, etc.).
- Stream Classes II and III do not normally occur in this process group. If they should occur, harvest control must meet management objectives for Class II and III of the Alluvial Fan Process Group.

Alluvial Fan Process Group
(Channel types AF1, AF2, AF8)

Stream Class

	I	II	III
Objectives	<ul style="list-style-type: none"> - Allow no activities which may cause floodplain destabilization - Assure the protection of riparian habitat - Maintain or improve aquatic biological productivity - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Allow no activities which may cause floodplain destabilization - Assure the protection of riparian habitat - Maintain habitat capability for resident fish to the extent practicable 	<ul style="list-style-type: none"> - Allow no activities which may cause floodplain destabilization - Assure the protection of riparian habitat - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices.
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within active portion of fan or 100 feet of channel, whichever is greater - All harvest methods are available on remaining inactive portion of fan while meeting objectives 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within active portion of fan or 100 feet of channel, if the stream flows directly into a Class I stream (25 feet if not tributary to a Class I stream). - All harvest methods are available on remaining inactive portion of fan while meeting objectives - Allow single tree selection harvest within 25 to 60 feet from streambank if not within active portion of fan and not flowing directly into a Class I stream. 	<ul style="list-style-type: none"> - Allow no programmed commercial timber harvest within active portion of fan or 25 feet of streambank, whichever is greater - All harvest methods are available on remaining inactive portion of fan while meeting objectives

Stream Class

	I	II	III
Harvest Rate	- Beyond 100 feet of the stream, strive to maintain 90% of the normal basal area with trees 16" + dbh within areas with "no programmed commercial timber harvest" (see note below)	- Harvest should not exceed 50% of the forest land of individual fan. Remaining forested land is not to be harvested until created openings contain 50 foot tall conifer trees (approximately 30 yrs.)	
Salvage	- Allow no salvage in the no commercial timber harvest area unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives		- Allow salvage in all areas while meeting objectives
Roading	- Anticipate unstable stream channels in determining the feasibility and/or most practical road locations, stream crossings, and design.		

NOTES:

- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, but must meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).

Moderate Gradient Mixed Control Process Group
(Channel types MM1, MM2)

Stream Class

	I	II	III
Objectives	<ul style="list-style-type: none"> - Assure protection of riparian habitat. - Allow no activities which may cause floodplain destabilization. - Maintain or improve aquatic biological productivity - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Assure protection of riparian habitat. - Allow no activities which may cause floodplain destabilization - Maintain habitat capability for resident fish to the extent practicable 	<ul style="list-style-type: none"> - Assure protection of riparian habitat. - Allow no activities which may cause floodplain destabilization. - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices.
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of channels. - Allow single tree selection on remainder of the area. 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams. For other streams, allow single tree selection harvest within 25 feet of MM1 channels and 60 feet of MM2 channels. - All harvest methods are available on remaining area; where timber harvest is allowed within 100 feet of the stream, final harvest should incorporate undulating unit boundaries to limit the amount of continuous disturbance parallel to the streambank 	<ul style="list-style-type: none"> - Allow single tree selection within 25 feet of MM1 channels - All harvest methods are available on remaining area while meeting objectives

Stream Class

	I	II	III
Harvest Rate	- Forest-wide Standards and Guidelines for timber apply		
Salvage	- Allow no salvage in the 'no commercial timber harvest areas' unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in all areas while meeting objectives - Allow salvage in other areas while meeting objectives		
Roading	- Special road construction techniques may be required to ensure fish passage		

NOTES:

- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, but must meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).

Large Contained Process Group (Channel types LC1, LC2)

Stream Class

	I	II
Objectives	<ul style="list-style-type: none"> - Maintain or improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - All harvest methods are available on remaining area while meeting objectives - Full suspension yarding is required to cross stream channel 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams - Allow no programmed commercial timber harvest within 25 feet of other streams - All silvicultural systems are available on remaining area while meeting objectives - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding is required to cross stream channel
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest" areas unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives 	
Roading	<ul style="list-style-type: none"> - Road construction is generally not appropriate in this process group; where road crossings are required, minimize erosion and sedimentation associated with road crossing approaches within inner gorge 	

NOTES:

- A primary consideration for timber harvest within the Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, but must meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).
- Stream Class III does not normally occur in this process group. If it should occur, Harvest Control must meet Management Objectives for Class III of the Moderate Gradient Contained Process Group.

Moderate Gradient Contained Process Group
(Channel types MC1, MC2, MC3)

Stream Class

	I	II	III
Objectives	<ul style="list-style-type: none"> - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization - Maintain or improve aquatic biological productivity - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization - Maintain habitat capability for resident fish to the extent practicable 	<ul style="list-style-type: none"> - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices.
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - Beyond 100 feet, selectively leave trees with crowns that do not extend above the slope break - Minimize soil disturbance associated with yarding within the inner gorge - Full suspension yarding required to cross stream channel - Maintain near-natural reserve tree component of stand 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams - Selectively leave trees with crowns that do not extend above the slope break along streams which do not flow directly into Class I streams, and beyond 100 feet for other streams - Minimize soil disturbance associated with yarding within inner gorge - Full suspension yarding required to cross stream channel 	<ul style="list-style-type: none"> - All harvest methods are available while meeting objectives - Minimize soil disturbance associated with yarding within the inner gorge.

Stream Class

	I	II	III
Salvage	- Allow no salvage in the "no commercial timber harvest areas" unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams)		- Allow salvage in other areas while meeting objectives
Roading	- Where road crossings are required, minimize erosion and sedimentation associated with road crossing approaches within the inner gorge		

NOTES:

- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, but must meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).

High Gradient Contained Process Group
(Channel types HC1, HC2, HC3, HC4, HC5, HC6, HC8, HC9)

Stream Class

	II	III
Objectives	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization. 	<ul style="list-style-type: none"> - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices. - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams - Selectively leave trees with crowns that do not extend above the slope break along streams which do not flow directly into Class I streams and beyond 100 feet for other streams. - Minimize soil disturbance associated with yarding within inner gorge. - Full suspension yarding required to cross stream channel. 	<ul style="list-style-type: none"> - Allow harvest to streambank while meeting objectives - Full suspension required to cross stream channel
Harvest Rate	<ul style="list-style-type: none"> - Harvest rate not to exceed 25% of the acres every 20 years of a 3rd order or larger watershed. (Note: this guideline applies only to those acres associated with this LUD) 	
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest areas" unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives. 	<ul style="list-style-type: none"> - Allow salvage while meeting objectives

- NOTES:**
- Commercial timber harvest guidelines may vary, based on site-specific analysis, but must meet process group objectives.
 - Stream Class I does not normally occur in this process group. If they should occur, Harvest Control must meet Management Objectives for Class I of the Moderate Gradient Contained Process Group.

Palustrine Process Group
(Channel types PA1, PA2, PA3, PA4, PA5)

Stream Class

	I	II
Objectives	<ul style="list-style-type: none"> - Maintain or improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat - Allow no activities which may cause floodplain destabilization
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - Allow no programmed commercial timber harvest beyond 100 feet 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet of streams which flow directly into Class I streams - Allow no programmed commercial timber harvest along other streams and, for all streams, beyond 100 feet
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the 'no commercial timber harvest areas' unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas using non-ground disturbing methods, while meeting objectives e.g. helicopter) 	
Roading	<ul style="list-style-type: none"> - Wetland values should receive special consideration in locating roads. 	

NOTES:

- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, but must meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).
- Stream Class III does not normally occur in this process group. If it should occur, Harvest Control must meet Management Objectives for Class III of the Moderate Gradient Contained Process Group.

Lakes and Ponds
(Channel types not classified as streams)

Stream Class

	I	II	III
Objectives	<ul style="list-style-type: none"> - Maintain or improve aquatic biological productivity - Assure the protection of riparian habitat - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Allow no measurable reduction in smolt habitat capability except when change is a result of natural change - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species 	<ul style="list-style-type: none"> - Maintain habitat capability for resident fish to the extent practicable - Assure the protection of riparian habitat 	<ul style="list-style-type: none"> - Minimize the effects of timber harvest and related land disturbance activities on the beneficial uses of water by applying Best Management Practices. - Assure the protection of riparian habitat
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - Allow uneven-aged management 100 to 500 feet of lake or pond, or the extent of this LUD, whichever is less - Any silvicultural system applies for remainder of area while meeting objectives. 	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet in width of lakes and ponds which: 1) flow directly into a Class I stream, or 2) flow into a Class II stream which flows directly into a Class I stream - For lakes and ponds not flowing directly into a Class I stream, allow uneven-aged management within 100 feet of lakes and ponds less 50 acres - Allow uneven-aged management 100 to 500 feet, or extent of land use designation whichever is less, of lakes greater than 50 acres - Any silvicultural systems apply for the remainder of the area while meeting objectives - Treat as the adjacent LUD if lake or pond is less than 5 acres 	<ul style="list-style-type: none"> - Maintain a minimum of 50% of natural shading vegetation for temperature sensitive lakes - All silvicultural systems available while meeting objectives - Treat as the adjacent LUD if lake or pond is less than 5 acres

Stream Class

	I	II	III
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest areas" unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives 		<ul style="list-style-type: none"> - Allow salvage in all areas while meeting objectives
Roading	<ul style="list-style-type: none"> - Roads may be allowed if other practical alternatives are not available or if needed to access the water body for recreation or other needs 		

NOTE:

- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, commercial timber harvest guidelines may vary, based on site-specific analysis, but must meet process group objectives.
- Except within 100 feet of a Class I stream and 100 feet of a Class II stream which flows directly into a Class I stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g. for bridge stringers, totem poles, etc.).

Estuarine Process Group*
(Channel types ES1, ES2, ES3, ES4, ES8)

Stream Class

	I
Objectives	<ul style="list-style-type: none"> - Maintain or improve aquatic biological productivity - Assure the protection of riparian habitat - Allow no measurable reduction in smolt habitat capability except when change is a result of natural processes - Restore stream and/or watershed condition where habitat capability has been reduced from the natural capability - Maintain/manage old-growth characteristic habitat for riparian-associated wildlife species
Harvest Control	<ul style="list-style-type: none"> - Allow no commercial timber harvest within 100 feet - Allow no programmed commercial timber harvest within 100 to 500 feet of ES4 and ES8 estuarine channels, or the extent of this Land Use Designation, whichever is less - Allow no programmed commercial timber harvest within 100 to 200 feet of ES2 and ES3 estuarine channels, or the extent of this Land Use Designation, whichever is less - Allow uneven-aged silvicultural system for remainder of area
Harvest Rate	<ul style="list-style-type: none"> - Beyond 100' from the stream, strive to maintain 90% of the normal basal area with trees 16" + dbh within areas with no programmed commercial timber harvest (see note below)
Salvage	<ul style="list-style-type: none"> - Allow no salvage in the "no commercial timber harvest areas" unless needed to meet process group objectives (e.g., windthrown trees restricting fish passage in streams) - Allow salvage in other areas while meeting objectives
Roading	<ul style="list-style-type: none"> - Juvenile fish passage may require special attention - Generally, no roading should occur in estuarine wetland areas

NOTES:

- * This area is often covered by the Beach Fringe and Estuarine Forestwide Standards and Guidelines which would take precedence over management under the Riparian Area Prescription.
- A primary consideration for timber harvest within this Land Use Designation is to maintain windfirmness of the unharvested trees. Where additional distance is required to provide for reasonable assurance of windfirmness, harvest may be allowed but will be limited to uneven-aged silvicultural systems.
- Commercial timber harvest guidelines beyond 100 feet may vary, based on site-specific analysis, but must meet process group objectives.
- Beyond 100 feet of the stream, incidental cutting of trees may be allowed in areas not programmed for commercial timber harvest on a case-by-case basis (e.g., for bridge stringers, totem poles, etc.).
- Stream Classes II and III do not normally occur in this process group. If they should occur, Harvest Control must meet Management Objectives for Class II and III of the Lakes and Ponds Process Group.

Appendix D

Biological Assessment

Draft
BIOLOGICAL ASSESSMENT and BIOLOGICAL EVALUATION
for the Upper Carroll Project Area

August 1995

This combined draft Biological Assessment and Biological Evaluation was prepared for the Upper Carroll Project Area as required by Section 7 of the Endangered Species Act (as amended) and the USDA Forest Service threatened, endangered, and sensitive plant and animal species policy (FSM 2670). This document describes the occurrence of and project effects on species that are Federally listed or proposed for threatened or endangered status. Although not required, candidate plant and animal species within the Project Area are also addressed. This document also serves as a BE by including equivalent information on Forest Service-listed sensitive species. The BE is not required under ESA, but is required by the Forest Service for all internal programs and activities (FSM 2672.4).

An Environmental Impact Statement is being prepared for the Upper Carroll Project Area. The action includes the harvest of approximately 1,100 to 2,600 acres of old-growth forest, construction of 25-70 miles of new roads, the use of three existing log transfer facilities, and the construction of one new log transfer facility. The Upper Carroll Project Area includes 47,997 acres, approximately 25 air miles north of Ketchikan, Alaska. It encompasses an area of northcentral Revillagigedo (Revilla) Island, from Carroll Inlet to Neets Bay. The Project Area includes Wildlife Analysis Areas (WAA's) 406 and 510.

This BA/BE addresses 31 plant and animal species. It covers the endangered humpback whale (*Megaptera novaeangliae*), and the Eskimo curlew (*Numenius borealis*); the threatened American peregrine falcon (*Falco peregrinus anatum*), Aleutian Canada goose (*Branta canadensis leucopareia*), and the Steller sea lion (*Eumetopias jubata*); one candidate frog species, four candidate plant species, and six candidate bird species. It also includes three bird species and 10 plant species on the Forest Service Region 10 sensitive species list, but not listed as endangered, threatened or candidates under the Endangered Species Act.

I. IDENTIFICATION OF ENDANGERED AND THREATENED SPECIES AND/OR CRITICAL HABITATS FOR SUCH SPECIES WITHIN THE PROJECT AREA.

A. Federal Threatened, Endangered, and Candidate Species

Federally listed threatened and endangered species are those plants and animal species formally listed by the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS), under the authority of the Endangered Species Act of 1973, as amended. An endangered species is defined as one which is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as one which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Candidate species are those being considered for listing as threatened or endangered by the USFWS or NMFS. A category 1 candidate is one for which the agency has sufficient data in its possession to supporting listing the species as threatened or endangered. Category 2 candidate species are those species for which

there is information indicating the species might qualify for endangered or threatened status, but for which further evaluation is needed. Category 3 candidate species are species that were considered for listing as endangered or threatened, but are no longer under consideration.

Species listed as endangered or threatened are provided statutory protection under the Endangered Species Act of 1973, as amended; candidate species are not. Therefore, under the Endangered Species Act, agencies technically have no legal obligation to take action on Category 2 or 3 species. Although the USFWS and NMFS do not have legal authority to regulate management of National Forest lands for candidate species, the Forest Service has agreed to coordinate closely with the USFWS and NMFS in an effort to prevent candidate species from declining to where they need to be listed as threatened or endangered (Memorandum of Understanding January 25, 1994).

The State of Alaska has an Endangered Species Law which authorizes the Commissioner of the Alaska Department of Fish and Game (ADF&G) to list Alaska endangered species and species of concern.

Table 1 summarizes the threatened, endangered, and candidate species of animals and plants occurring on or near the Upper Carroll Project Area which are addressed in this Biological Assessment and Biological Evaluation.

Table 1
Status* of Threatened, Endangered, and Candidate Species Occurring On or Near the Upper Carroll Project Area with Summary BA/BE Finding.

SPECIES		STATUS		BA/BE FINDING	
	USF-WS	FS	STATE		
Animals					
Humpback whale	E		E	Not...Adversly Effect	
Steller sea Lion	T			Not...Adversly Effect	
Alexander Archipelago wolf	2			May Effect -	
American Peregrine falcon	T		E	Not...Adversly Effect	
Arctic Peregrine falcon	2		E	Not...Adversly Effect	
Aleutian Canada goose	T		E	Not...Adversly Effect	
Trumpeter swan		S		No Effect	
Eskimo curlew	E		E	Not...Adversly Effect	
Marbled Murrelet	2		C	May Effect -	
Kittlitz's murrelet	2			No Effect	
Osprey		S		No Effect	
Queen Charlotte Goshawk	2	S	C	May Effect -	
Harlequin Duck	2			No Effect	
Olive-sided flycatcher	2			May Effect +	
Spotted Frog	2			No Effect	
Fish					
Bull Trout	2			No Effect	

SPECIES		STATUS		BA/BE FINDING	
Plants					
Aster yukonensis	2			No Effect	
Calamagrostis crassiglumis	2			No Effect	
Carex lenticularis var. dolia	2	S		No Effect	
Montia bostockii	2			No Effect	
Cirsium edule		S		No Effect	
Glyceria leptostachya		S		No Effect	
Hymenophyllum wrightii		S		No Effect	
Isoetes truncata		S		No Effect	
Ligusticum calderi		S		No Effect	
Platanthera chorisiana		S		May	
				Effect -	
Platanthera gracilis		S		No Effect	
Poa laxiflora		S		No Effect	
Ranunculus orthorhynchus var. al-		No Effect			
aschensis S					
Senecio moresbiensis		S		No Effect	

* E = Endangered, Federal or State; T = Threatened, Federal; 2 = Category 2 Candidate; 3 = Category 3 Candidate; C = Candidate, State; S = Sensitive, FS Region 10.					

There has been no critical habitat officially designated for any of these species at this time in Southeast Alaska, except for specific rookery (Mating and pupping) and haulout locations for Steller sea lions (CFR part 226, August 27, 1993).

The USFWS has identified northern goshawk and marbled murrelet as being species of concern within Revillagigedo Island Area (Holmberg March 5, 1992). In a more recent letter responding to the NOI for the Upper Carroll project, the USFWS identified the Queen Charlotte goshawk and the Alexander Archipelago wolf as Category 2 candidate species which should be addressed in the EIS as well as the following Category 2 species which also occur in Southeast Alaska: marbled murrelet (*Brachyramphus marmoratus*), Kittlitz's murrelet (*Brachyramphus brevirostris*), harlequin duck (*Histrionicus histrionicus*), olive-sided flycatcher (*Contopus borealis*), spotted frog (*Rana pretiosa*), and bull trout (*Salvelinus confluentus*).

The threatened American peregrine falcon may migrate through the Revillagigedo Island area, as may the Eskimo curlew, Aleutian Canada goose, and Harlequin duck and the Steller sea lion occurs in the adjacent saltwaters (Holmberg March 5, 1992). There has been no evidence of the existence of any other listed species within the Project Area.

The humpback whale (*Megaptera novaeangliae*) and Steller sea lion (*Eumetopias jubata*) were listed by the National Marine Fisheries Service (NMFS) in an assessment of the Project Area (Pennoyer February 6, 1992). During 1991, NMFS completed final recovery plans for the humpback whales. The Steller (northern) sea lion

is currently listed as threatened (*Federal Register* Dec. 4, 1990; NMFS 1992). Presently, critical habitat has not been designated for either species (Pennoyer February 6, 1992).

No plant species known to occur in the Project Area have been determined to be threatened or endangered. Several Forest Service listed sensitive species have been found within the project boundary-Davy Manna-grass (*Glyceria leptostachya*) and Choris bog orchid (*Platanthera Chorisiana*). Category 2 plants *Calamagrostis crassiglumis* and *Carex lenticularis* could potentially occur within the Project Area, but have not been documented or found.

No fish species known to occur in the Project Area have been determined to be threatened, endangered, or sensitive.

II. THREATENED/ENDANGERED SPECIES ASSESSMENTS

HUMPBACK WHALE (*Megaptera novaeangliae*)

Distribution and Population

Humpback whales are the most abundant of the eight species of endangered whales that occur in Southeast Alaska waters. Their population in the North Pacific is about 1,200, which is about eight percent of the prewhaling population. These whales are regularly sighted in the Inside Passage and coastal waters of the Southeast Alaska panhandle from Yakutat Bay south to Queen Charlotte Sound. Humpback whales feed in Southeast Alaskan panhandle waters from about May through December, although some have been seen every month of the year. Peak numbers of whales are usually found in nearshore waters during late August and September, but substantial numbers usually remain until early winter. Baker et al. (1985) estimate that 300-350 humpback whales inhabit Southeast Alaska during the summer and fall.

The local distribution of humpbacks in Southeast Alaska appears to be correlated with the density and seasonal availability of prey, particularly herring (*Clupea harengus*) and euphausiids. Important feeding areas include Glacier Bay and adjacent portions of Icy Strait, Stephens Passage/Frederick Sound, Seymour Canal and Sitka Sound. Glacier Bay and Icy Strait appear to be an important feeding area early in the season, when whales prey heavily on herring and other small, schooling fishes. Frederick Sound is important later in summer, when whales feed on swarming euphausiids. During autumn and early winter, humpbacks move out of the Sound to areas where herring are abundant, particularly Seymour Canal. Other areas of Southeast Alaska may also be important for humpbacks and need to be evaluated. These include: Cape Fairweather, Lynn Canal, Sumner Strait, Dixon Entrance, the west coast of Prince of Wales Island, and offshore banks such as the Fairweather Grounds.

Because the humpback inhabits shallow coastal areas, it is increasingly exposed to human activity. Consequently, these whales may be more susceptible to confrontational disturbance, displacement, and loss of habitat from environmental degradation than some other whale species. Humpbacks summering in Southeast Alaska have been linked to each of three wintering areas in Mexico, Hawaii, and Asia.

Effects of Upper Carroll Proposed Actions on Population or Habitat

The recovery plans for the humpback whale identified six known or potential categories of human impacts to these species: hunting, entrapment and entanglement in fishing gear, collisions with ships, acoustic disturbance, habitat degradation, and competition for resources with humans.

National Forest management activities which may have an effect on whale habitats or populations generally fall into the categories of acoustic disturbance and habitat degradation. These management activities include: the development and use of log transfer facilities (LTF's) and their associated camps, the movement of log rafts from log transfer facilities to mills, and the potential development of other docks and associated facilities for mining, recreation, and other forest uses and activities. Generally, with the development and use of LTF's and other docking facilities for projects, there is an associated increase in recreational boating in the immediate vicinity during the construction and use of the facilities.

Most of the information and data for whales in Southeast Alaska are associated with one species, the humpback whale, because it is the most abundant whale to occur in Southeast Alaska waters. The other seven species of whales are either present only seasonally as they migrate along the outer coastal areas, or are only occasionally found in the inside coastal waters of Southeast Alaska. The following discussion and analysis is primarily based on humpback whales, but is assumed to be applicable to the other species of whales.

Construction and operation of LTF's and other docking facilities are restricted to small, very localized areas of the marine environment. There are four LTF's currently on the Project Area (Fire Cove, Shrimp Bay, Shelter Cove and Carroll Inlet-See attached map). An estimated 2 acres of marine benthic disturbance associated with these existing LTF's could occur as a result of bark deposition. The Fire Cove, Shrimp Bay and Shelter Cove LTF's were designed to maximize flushing suspended bark away from the LTF area to the open sea before it can accumulate on the bottom, however, the Carroll Inlet LTF is an old site and poorly situated for flushing. A new LTF is proposed for construction under the Upper Carroll EIS to relocate the Carroll Inlet LTF further south to improve flushing-See attached map). Less than one acre of marine benthic habitat would be impacted by the construction of the new LTF.

There is little potential to directly affect whales with these facilities. During the summer of 1989, there was a report of a humpback whale entangled in some cables from an inactive LTF site on the Stikine Area. This is the only known direct effect incident related to LTF's.

Two potential indirect effects of LTF's and other docking facilities and associated activities have been identified: 1) effects on whale prey species, and 2) disturbances of whales by boat traffic associated with LTF's.

Effects on Prey. Nemoto (1970) noted that euphausiids and gregarious fish are the primary prey of humpbacks. Thirteen species of fish and 57 species of invertebrates were identified as humpback whale prey in Southeast Alaska. Humpbacks studied in Glacier Bay and Stephens Passage-Frederick Sound were found most frequently in areas of high prey density (Wing and Krieger 1983).

Construction and operation of all LTF's and similar facilities require U.S. Army Corps of Engineer and U.S. Environmental Protection Agency permits, and State of Alaska tidelands permits. The permitting process provides that construction and operation maintain water quality in the specific facility locations, and that marine circulation and flushing are maintained. All facilities must be in conformance with permit standards. Although the effects may vary locally, the major effect of leachates (ie. terpene, alpha-conindentric acid, alpha-conindentrin, hydroxymatairesinol, linoletic acid, and dehydroabientic acid) from stored log rafts, is upon invertebrates.

Crustaceans, shrimp, and crab larvae, seem especially sensitive (Pease 1973, Buchanan and Tate 1976). EPA measuring techniques may be required to monitor the LC₅₀ levels at each LTF (Peltier and Weber 1985) in order to insure impacts are limited to the approved "zone of deposit". A local increase in the herring and herring egg fishery could also impact this food item.

Effects from Disturbance. Humpback whale response to nearby boating activity varies from no apparent response to pod dispersal, sounding, breaching, evasive underwater maneuvers, and maintaining distance (Baker and Herman 1983, Baker et. al. 1982). Disturbance by boat activity has been suggested as one of the possible causes of observed changes in whale distribution in Southeast Alaska. Direct pursuit of whales by boats, and frequent changes in boat speed and direction appear to elicit avoidance behaviors more frequently than other types of boat traffic. However, whales may readily habituate to constant and familiar noise (Norris and Reeves 1978). Whales can be commonly found in some areas of Southeast Alaska which have considerable boat traffic. Whether they are habituated to boat traffic has not yet been documented. Adverse effects from current levels of boat traffic have not yet been documented.

Two basic types of boat activity associated with LTF's are log raft towing and recreational boating by workers. Log raft towing frequency would vary between camps, seasons, and years, with an average of about once a week during the working season (U.S.D.A. Forest Service 1989). Tug boats maintain relatively constant speeds and directions during log raft towing; constant speed and direction elicit less avoidance behavior from whales than other types of boating activity. Log raft towing routes are generally well established, and adverse effects from log raft towing have not been documented.

Recreational boating activity by camp residents would vary between seasons, years, and camps of different sizes. This activity would be concentrated near LTF sites, other docking facilities, and camps. It is estimated that most recreational boating would occur within a few miles of the site, few trips would be made over 10 miles, and activity greater than 30 miles from a site would be negligible. This boating would involve frequent changes in speed and direction and may include some small amount of whale pursuit, if the whales are within sight of the camp or an occupied boat. The effect of such recreational activity on whales would depend on many factors such as size of the bay, depth of the waters in the bay, number of boats, individual behavior responses of the whales, etc. At the present time, there is not a quantifiable way to estimate these possible effects.

The following Forest-wide standards and guidelines have been developed for application on all Forest Service permitted or approved activities and will be incorporated into the Revilla FEIS from the Supplement DEIS Tongass Land Management Plan by reference:

Provide for the protection and maintenance of whale habitats:

1. Avoid intentional aircraft flights below 500 feet above ground level in the known vicinity of whales on Forest Service permitted or approved activities, when weather ceilings permit.
2. Avoid intentional approach in a vessel of 100 feet or more in length to within 1/4 mile of whales on Forest Service permitted or approved activities, when safe passage exists.
3. Avoid intentional approach in a vessel of less than 100 feet in length to within 100 yards of whales on Forest Service permitted or approved activities, when safe passage exists.

No adverse effects on whales from implementation of Forest management activities are anticipated. Indirect effects may be associated with possible increased boating activity, but are mitigated by Forest Service and NMFS standard and Guidelines

STELLER SEA LION (*Eumetopias jubata*)

Distribution and Population

The Steller (northern) sea lion ranges from Hokkaido, Japan, through the Kuril Islands and Okhotsk Sea, Aleutian Islands and central Bering Sea, Gulf of Alaska, Southeast Alaska, and south to central California. There is not sufficient information to consider animals in different geographic regions as separate populations. The centers of abundance and distribution are the Gulf of Alaska and Aleutian Islands, respectively.

In 1990, because of an abrupt population decline observed over the last 31 years (primarily in the former Soviet Union, Gulf of Alaska, and Aleutian Islands), the NMFS listed the Steller sea lion as a threatened species throughout its range. The number of sea lions observed on certain rookeries from Kenai Peninsula to Kiska Island declined by 63 percent since 1985 and by 82 percent since 1960. Significant declines have also occurred on the Kuril Islands. Information on population trends in Southeast Alaska is sketchy, but what data does exist suggests that Southeast populations are stable or perhaps slightly decreasing.

The cause of overall population declines has not been confirmed. However, incidental mortality of sea lions in commercial fishing gear, shooting by fishermen, and reduced prey species due to commercial fishing operations have probably contributed significantly to declines (Reeves et al. 1992).

When the sea lion was given emergency listing as a threatened species in the *Federal Register* (April 5, 1990), buffer zones restricting human activities were established around rookeries west of 150 degrees west longitude (does not include Southeast Alaska). The closest Steller sea lion rookery to the North Revilla Project Area is on Forrester Island, west of Prince of Wales Island. A sea lion haulout used for sunning and resting occurs on Grindall Island, of the south tip of Kasaan Peninsula. It is not designated as critical habitat. A recovery team has prepared a draft recovery plan.

Important food resources include walleye pollock, salmon, eulachon, and cephalopod mollusks. Steller sea lions forage predominantly in nearshore areas and over the continental shelf.

Effects of Upper Carroll Proposed Actions on Population or Habitat

The NMFS provides a summary of factors affecting the Steller sea lion (*Federal Register* April 5, 1991). These factors include reductions in the availability of food resources, especially pollock, which is the most important prey species for sea lions; commercial harvests of sea lion pups; harvests for subsistence and for public display and scientific research purposes; predation by sharks, killer whales, and brown bear; disease; the inadequacy of existing regulations regarding quotas on the incidental harvesting of sea lions during commercial fishing operations; other natural or human incidences such as shooting adult sea lions at rookeries, haulout sites, and in the water near boats. None of these factors are regulated by or within the jurisdiction of the Forest Service.

Southeast Alaska populations of Steller sea lions have not declined to the extent that other populations have. Harassment or displacement of sea lions from preferred habitats by human activities such as boating, recreation, aircraft, log transfer facilities, log raft towing, etc., is a concern with regard to long-term conservation of the sea lion in Southeast Alaska. Forest-wide standards and guidelines direct the Forest Service to prevent and/or reduce potential harassment of sea lions and other marine mammals due to activities carried out by or under the jurisdiction of the Forest Service, and these will be incorporated by reference into the Upper Carroll FEIS from the Supplement DEIS Tongass Land Management Plan. These Forest-wide standards and guidelines are as follows:

Provide for the protection and maintenance of harbor seal, Steller sea lion, and sea otter habitats.

1. Ensure that Forest Service permitted or approved activities are conducted in a manner consistent with the Marine Mammal Protection Act and the Endangered Species Act. "Taking" of marine mammals is prohibited; taking includes harassment, pursuit, or attempting any such activity.
2. Locate facilities and concentrated human activities requiring Forest Service approval as far from known marine mammal haulouts, rookeries and known concentration areas as practicable. The following distances are provided as general guidelines for maintaining habitats and reducing human disturbance:
 - * Facilities, camps, LTF's, campgrounds and other developments should be located 1 mile from known haulouts, and farther if the development is large.
 - * For aircraft flights on Forest Service approved projects, when weather ceilings permit, maintain a constant flight direction and airspeed and a minimum flight elevation of 1,000 feet (305 meters) within .5 miles (800 meters) of the haulouts.
 - * For boat traffic on Forest Service approved projects, remain at least .5 miles (800 meters) away from hauled-out harbor seals during the pupping and rearing season (15 May - 1 July). Minimize disturbance of seals with pups in the water by remaining at least 330 feet (100 meters) away from parturient seals. (*Note: These distances are derived from a study in a park where hunting is prohibited and access is restricted and where viewing seals is encouraged. These distances may be too liberal and may need to be enlarged in situations where access and hunting are not controlled and where seals would be expected to be more reactive to boat traffic.*)
 - * Minimize disturbance effects of boat traffic: for molting harbor seals, remain .5 miles (800 meters) away from haulouts where seals are molting; for Steller sea lions, remain at least .5 miles (800 meters) away from haulouts and rookeries; for sea otters, avoid known feeding and resting concentration areas, especially following prolonged stormy periods when sea otters have been unable to feed.
 - * Individuals associated with Forest Service permitted or approved activities will not intentionally approach within 100 yards, or otherwise intentionally disturb or displace any hauled-out marine mammal.
3. Cooperate with State and other Federal agencies to develop sites and opportunities for the safe viewing and observation of marine mammals by the public. Maintain a public education program explaining Forest management activities related to marine mammals in cooperation with State and other Federal agencies.

No direct effects on sea lions from Forest management activities are anticipated. Compliance with these standards and guidelines will result in no anticipated adverse effects on sea lion populations or their habitats for any of the alternatives

AMERICAN PEREGRINE FALCON (*Falco peregrinus anatum*)

Distribution and Population

The American peregrine falcon is primarily associated with interior Alaska for breeding, nesting and rearing of young. The falcon is highly migratory, wintering as far south as northern Argentina and occurring in Southeast Alaska only during migration periods (Ambrose, et al., 1988). Reproduction has increased population numbers three-fold in Alaska (ADF&G letter Feb. 6, 1987, Ambrose, et al., 1988, minutes of Interagency Wildlife Technical Committee Meeting of March 29, 1991). The USFWS has recently (October 5, 1994)

down-listed the species from endangered to threatened. Population numbers of the American peregrine falcon are continuing to increase (ADF&G letter dated February 6, 1987; Ambrose et al. 1988).

Effects of Upper Carroll Proposed Action on Population or Habitat

The American peregrine falcon occur in Southeast Alaska only during migration. The primary reason for past declines in peregrine falcon populations was the proliferation of organochlorine pesticides, especially DDT and its principal metabolite DDE (Ratcliff 1969; Paskall 1976; Cade et al. 1971; Paskall and Kiff 1979; USFWS 1982). No organochlorine pesticides are authorized for use on the Tongass National Forest.

During migration through Southeast Alaska, the availability and abundance of prey species will most likely be the primary habitat factor affecting peregrine falcons. In coastal areas of Washington, the primary prey species for peregrine falcons were shorebirds and waterfowl species; passerine birds were also identified in the diet (Anderson and Debruyne 1979; Anderson et al. 1980). It is assumed that food sources would be similar for coastal Alaska. Peregrines forage over open sites such as over bodies of water, marshes, grasslands, and shorelines, as well as above wooded areas. Peregrines attack flying prey from above or by chasing them. Although they forage over wide areas, they also have preferred foraging sites (White 1974).

Actual migration routes and patterns, and foraging areas, have not been identified for these two subspecies of peregrines in Southeast Alaska. Forest-wide standards and guidelines have been developed for protecting seabird rookeries and waterfowl concentration areas (pages 4-102 to 4-104 in U.S.D.A. Forest Service 1991b). A wide variety of passerine (perching and song) birds will be available from numerous open and forested communities under all alternatives associated with the Upper Carroll Project.

No adverse effects on American peregrine falcon populations or their habitats are anticipated with any Forest management activities under any of the alternatives.

ALEUTIAN CANADA GOOSE (*Branta canadensis leucopareia*)

Distribution and Population

The breeding, nesting, and rearing of young Aleutian Canada geese is primarily associated with the Aleutian Islands. The Aleutian Canada goose winters in western Oregon, and in northwestern and central California. Although their movements within Alaska are not well known, the Aleutian Canada goose may occur in Southeast Alaska during migration. Population numbers in Alaska are increasing, and the USFWS is considering removing the species from the threatened list.

Effects of Upper Carroll Proposed Action on Population or Habitat

The Aleutian Canada goose is not primarily associated with Southeast Alaska. Although migration patterns in Alaska are not well known, Aleutian Canada geese may occur in Southeast Alaska as migrants. Due to the limited use of the Project Area by Aleutian Canada geese, no adverse effects on their population by any of the alternatives is anticipated.

ESKIMO CURLEW (*Numenius borealis*)

Distribution and Population

The Eskimo curlew is primarily associated with western and northern Alaska. The Eskimo curlew is rare and not typically found in Southeast Alaska, but it may occur as a migrant.

Effects of Upper Carroll Proposed Action on Population or Habitat

Due to the limited use of the Project Area by the Eskimo curlew, no adverse effects on their population by any of the alternatives is anticipated.

III. CANDIDATE SPECIES ASSESSMENTS

ALEXANDER ARCHIPELAGO WOLF (*Canis lupus ligoni*)

Taxonomic Status and Range

The Alexander Archipelago wolf is a small subspecies of the gray wolf (Goldman 1937, Pedersen 1983), similar in appearance to the Vancouver Island wolf (*C.l. crassodon*). Kirchhoff (1992) described the Alexander Archipelago wolf as occurring on the Southeast Alaska mainland and all large island in Southeast Alaska except for Admiralty, Baranof, and Chichagof.

On December 17, 1993, the USFWS received a petition from the Biodiversity Legal Foundation to list the Alexander Archipelago wolf of Southeast Alaska as threatened pursuant to the Endangered Species Act. On May 13, 1994, the USFWS found that the petitioners had presented substantial information indicating that listing may be warranted and a status review of the species was initiated. On February 16, 1995, the USFWS found that there was not enough scientific evidence to warrant listing.

The primary food of most Southeast Alaskan wolves is deer (Wood 1990, Person 1993). Beaver, mountain goat, and moose are also primary prey in some mainland areas and spawning salmon are fed on when available (Wood 1990). Alexander Archipelago wolf abundance is likely linked to deer abundance and availability, particularly in southern island habitats (Suring et al. 1988, Wood 1990, Person 1993).

Based on field observations, discussions with trappers and anecdotal information, the wolf population in Southeast Alaska is estimated to be 635 to 690 individuals, distributed in 85 packs (Morgan 1990). However, Person (per. comm. 1994, as cited in USFWS letter) estimates that the current Southeast population is 1,000 individuals and that 30-40 percent of them occupy Prince of Wales Island.

Many studies have shown that wolf abundance may be correlated with road density (Theil 1985, Jensen et al. 1986, Mech et al. 1988, Fuller 1989). In one study, wolves generally were not present where the density of roads used by humans exceeded 0.93 mi/sq mi (0.58 km/sq km) (Mech et al. 1988). However, other work has suggested that wolves could exist in areas with higher densities if these areas were adjacent to roadless areas (Mech et al. 1988). The primary threat of high road densities is the increased access to humans who kill wolves by shooting, snaring, or trapping (Van Ballenberghe et al. 1975, Mech 1977).

Based on application of the Tongass Habitat Capability Model for the gray wolf (see Upper Carroll DEIS), habitat capability declined by about 36% in the Project Area between pre-logging and existing conditions. This decline is directly related to a reduction in deer habitat capability associated with conversion of old-growth forest to young second growth. Accompanying this decline has been an increase in road density associated with logging activities. Road density under existing conditions is approximately 0.14 mi/sq mi across the Project Area.

Effects of Upper Carroll Proposed Action on Population or Habitat

Implementation of any of the Upper Carroll Project action alternatives will result in a reduction in deer habitat capability. Wolf habitat capability is predicted to be reduced in proportion to the reduction in deer habitat capability. The wolf habitat capability reduction is predicted to range from 2 percent for Alternative 4 to 4 percent for Alternative, and 3 percent for Alternatives 3 and 5.

Road densities will also increase in the Project Area as a result of implementation of one of the action alternatives. Total road density would range from 0.5 mi/sq mi for Alternative 3 and 1.1 mi/sq mi for Alternative 2 after implementation. However, the effect of increased road density would be substantially mitigated by access management and the fact that the road system in the Project Area is not connected to a population center (such as Ketchikan or like the situation on Prince of Wales Island).

Because of the reduction in deer habitat capability and the increase in road density associated with implementation of one of the action alternatives, the Upper Carroll Project may affect the Alexander Archipelago wolf. However, the effects of this project are not expected to be substantial due to the amount of roadless areas surrounding the Project Area and the fact that the road system is isolated from human population centers.

ARTIC PEREGRINE FALCON (*Falco peregrinus tundris*)

Distribution and Population

The Artic peregrine falcon is primarily associated with the area north of the Brooks Range and Seward Peninsula; it is highly migratory, wintering as far south as northern Argentina (Ambrose et al. 1988). It occurs in Southeast Alaska only during migration periods. Population numbers have increased three-fold in Alaska (ADF&G letter Feb. 1987; Ambrose et al. 1988; minutes of Interagency Wildlife Technical Committee Meeting of March 20, 1991). Effective November 4, 1994, the USFWS removed the species from the threatened list. It now has the status of a category 2 candidate species.

Effects of Upper Carroll Proposed Action on Population or Habitat

As described for the American peregrine falcon, no effects on the population or habitat of the Artic peregrine falcon are anticipated due to the Upper Carroll action alternatives.

MARbled MURRELET (*Brachyramphus marmoratus*)

The marbled murrelet is a small seabird that belongs to the family Alcidae. It is found throughout the North Pacific, the Asia subspecies (*B. m. perdix*) ranges from the Sea of Okhotsk, Kamchatka and Commander Islands, south to Korea, Japan and Kurile Islands. The North American subspecies (*B. m. marmoratus*) ranges from the Aleutian Archipelago in Alaska, eastward to Cook Inlet, Kodiak Island, Kenai Peninsula, and Prince William Sound, southward coastally throughout the Alexander Archipelago of Alaska and through British Columbia, Washington, Oregon to central California, with individuals wintering as far south as southern California (Marshall 1988, USFWS 1992). The species feeds below the water's surface on small fish and invertebrates in near-shore marine waters (Marshall 1988, USFWS 1992).

Marbled murrelets nest on land or in trees and lay only one egg. They are semi-colonial in their nesting habitats; nesting marbled murrelets are often aggregated (USFWS 1992). Alaska is the only state where marbled murrelets are known to nest on the ground in treeless areas. At least 18 ground nests have been identified with certainty as of 1994, based on sightings of the incubating bird (Mendenhall 1992, pers. comm., K. Nelson, Oregon Coop. Wildl. Res. Unit, Corvallis 1995 as cited in Polk Inlet BA/BE). Through 1994, a minimum of 73 tree nests have been located in North America (26 in Oregon, 6 in Washington, 11 in California, 11 in British Columbia and 19 in Alaska). Of 47 nests found in Washington, Oregon and California where data were available, all were located in old-growth trees that ranged in diameter at breast height from 35 inches to 210 inches. Nest trees located in Alaska ranged from 12 to 41 inches DBH (pers. comm., K. Nelson as cited in Polk Inlet BA/BE). Nests were located high above the ground and usually had good overhead protection (USFWS 1992). Both males and females incubate marbled murrelet eggs; one bird stays at the nest for 24 hours, while the other is feeding on the ocean. After hatching their young, the adults stay at the nest with the young bird for only about four days. After that, the young bird is left alone in the nest, except when the adults return to the nest to feed it (Interagency Meeting Records June 12, 1989).

Except for the fall period when they are molting, flightless, and stay on the ocean, birds have been known to fly to tree stands every month of the year. In Washington, birds have been recorded up to 50 miles inland (Hamer and Cummins 1991, in USFWS 1992).

Overview of work in Alaska. There is a current upland study of marbled murrelets on Naked Island in Prince William Sound. In the study area, murrelets flew most frequently into two areas with steep slopes facing west, and 70-80% cover of hemlock old-growth. A cursory review of the small sample suggested greater murrelet use of inland areas at the heads of bays as opposed to the outer peninsulas. Slopes facing northeast, west or southwest may have greater use than slopes facing north, northeast or southeast on Naked Island (Kuletz 1991).

A cooperative pilot study/survey between the Forest Service and the USFWS began in the summer of 1991, to evaluate possible at-sea survey techniques. Data from this study will be used to develop a statistically valid sampling design for a region-wide inventory to ascertain abundance and distribution of marbled murrelets in Southeast Alaska. This work will continue in 1993 and will include studies to evaluate factors which affect daily and seasonal distributions of murrelets.

Marbled murrelets are common along the coast of the Project Area. Boat transect surveys were conducted along the shoreline of logged and unlogged areas by the Craig and Misty Fiords Ranger Districts in 1991; these surveys counted 7.5 and 10 marbled murrelets per kilometer traveled parallel to the shoreline in transects 200 meters wide. Assuming that marbled murrelets along the Revillagigedo Island coast nest within the Upper Carroll Project Area, and assuming a conservative estimate of seven marbled murrelets per kilometer of shoreline for the Upper Carroll Project Area, then Upper Carroll (26.8 km of shoreline) might provide habitat for 188 marbled murrelets. This figure is likely low, because the Craig and Misty survey figures were for 200 meter wide transects, not for all distances out from the shoreline. The estimate for Upper Carroll assumes that the figure from the survey vicinity can be extrapolated to Upper Carroll and that birds nest in the general vicinity of where they are seen at sea.

In 1984 during a marbled murrelet research project conducted by the ADF&G, a tree nest was found on Baranof Island. This nest was on a large horizontal limb, 82 feet up in a mountain hemlock tree. In 1989, two more tree nests were found in California. Both nests were in large Douglas-fir trees, on large horizontal limbs, and were watched 24 hours a day. A newly hatched bird at one of these nests was carried off by a raven (Interagency Meeting Records, June 12, 1989). Thorne Bay Ranger District personnel collected data on a nesting stand on Prince of Wales Island in 1990. An occupied marbled murrelet ground nest was found in 1992 on Thorne Bay Ranger District. Stand data were collected in association with this sighting.

In 1994, marbled murrelet dawn surveys were conducted in Carroll Creek drainage July 7,8 and 9th at 3 widely separated locations with very few detections. One site was surveyed in Orchard Creek that had a total of 61 detections, mostly audible.

Old growth removal is not the only factor which may be influencing murrelet populations; other known factors include oil spills, predation, and commercial fishing (murrelets are caught in fishing nets). Mendenhall (1992) estimated the marbled murrelet population for Southeast Alaska ranged from 75,000 to 150,000 during the summer, based on surveys by M. McAllister from 1981-1988.

C.J.Ralph et al. (1995) estimated the marbled murrelet population in the Alexander Archipelago to be approximately 96,200, based on at-sea survey data.

Effects of Upper Carroll Proposed Action on Population or Habitat

No nesting sites for marbled murrelets have been identified within the Project Area, although it is assumed that they nest in suitable habitats.

Since all inland forest stands on the Tongass National Forest are less than 25 miles from salt water, all could be potential marbled murrelet nesting habitat (USDI Fish and Wildlife Service 1992). However, these birds more commonly occupy larger stands (greater than 500 acres) than smaller stands (less than 100 acres) in California; marbled murrelets are usually absent from stands less than 60 acres in size (Paton and Ralph 1988,

Ralph et al. 1990). Without precise knowledge to delineate the differences, all old-growth habitat greater than 8 MBF/acre is assumed to be suitable for nesting.

All action alternatives will harvest stands which may be capable of providing nesting habitat (old-growth forests) for marbled murrelets. Table 3 shows that Alternative 2 harvests 14 percent, Alternative 3 harvests 6 percent, Alternatives 4 harvests 9 percent, and Alternative 5 harvests 11 percent of the old-growth habitat (VC 4-7) in the Project Area, leaving at least 15,159 acres of old-growth unharvested.

In areas with timber harvesting, the amount of nesting habitat for marbled murrelets will be reduced. The amount of old-growth currently being used by marbled murrelets is unknown. The factors currently limiting marbled murrelets in Southeast Alaska have not been identified. Due to the amount of unknowns associated with marbled murrelets, it is not known what the actual effects of timber harvest will be, other than the total amount of habitat is reduced. Fragmentation or increased edge effects may also reduce habitat capability for marbled murrelets.

If the current population assumptions found in the Distribution and Population section are correct, and if it is assumed that nesting habitat is the limiting factor for the population, then a reduction in nesting habitat may have a proportional effect on the population. If so, then after a 14 percent reduction in potential nesting habitat (Table 2), the Upper Carroll Project Area might still support 162 or more birds. This assumes no influence caused by fragmentation or increased edge, and a uniform use of the available, suitable habitat.

In summary, the Upper Carroll Project may effect marbled murrelets, but the extent of this effect is unknown.

Table 2
Acres and Percent of Wildlife Habitats Proposed for Harvest, by Alternative

Habitat	Existing Acres	Alt. 1		Alt. 2		Alt. 3		Alt. 4		Alt. 5	
		Acres Cut	% Chg	Acres Cut	% Chg	Acres Cut	% Chg	Acres Cut	% Chg	Acres Cut	% Chg
Old Growth	17,641	0	0	2,482	14	1,170	6	1,556	9	1,967	11

SOURCE: Matson 1995. Data derived from GIS data base.

Murrelet nests are exceedingly difficult to find, and no intensive nest searches in Upper Carroll units are planned. However, if any nests are discovered, they will be protected by a minimum 30 acre buffer to maintain microclimatic conditions around the nest tree. If research, monitoring, or administrative studies uncover new information addressing murrelets in Southeast Alaska, they will be reviewed for use in and/or replacement of this guideline.

QUEEN CHARLOTTE GOSHAWK (*Accipiter gentilis laingi*)

Distribution and Population

The American Ornithologists Union (AOU) recognizes two subspecies of the northern goshawk in North America, *Accipiter gentilis atricapillus* and *A.g. laingi*, the Queen Charlotte goshawk (AOU 1957). Taverner (1940) first described the darker plumaged Queen Charlotte goshawk as a distinct race occurring in the coastal temperate rainforests of the Queen Charlotte Islands and Vancouver Island, British Columbia. Webster (1988) found that the Queen Charlotte goshawk occurred from Vancouver Island north to the Taku River near Juneau. The northern goshawk is identified as a category 2 candidate species throughout its range.

On May 9, 1994, the USFWS received a petition from the Southwest Center for Biological Diversity and numerous copetitioners, to list the Queen Charlotte goshawk as endangered pursuant to the Endangered Species Act. On August 19, 1994, the USFWS found that the information presented by the petitioners together with the information in USFWS files was substantial and indicated that listing may be warranted. Therefore, a status review of the species was initiated. After seeking publics and reviewing all the available information on the goshawk, a finding was issued June 28, 1995, that protection under the Endangered Species Act is not warranted at this time for the Queen Charlotte goshawk.

The goshawk is a wide-ranging forest raptor that generally occurs in low densities, from 2.4 pairs (Central Alaska, McGowan 1975) to 11.0 pairs (Arizona, Crocker-Bedford and Cheney 1988) per 100 square kilometers, although population densities in Southeast Alaska may be much lower (Crocker-Bedford 1992). The most recent estimates of the goshawk population in Southeast Alaska range from 100 to 381 pairs (USDA Forest Service 1991a; Crocker-Bedford 1994) to 100 to 800 pairs (Alaska Interagency Goshawk Committee, Report of June 30, 1994).

As of December, 1991, the Alaska Region Status Report for USDA Region 10 Sensitive Species Consideration, stated, "The two factors causing concern for the goshawk in southeast Alaska are: low current population numbers and potential declines in habitat capability. Both factors expose the Queen Charlotte Goshawk to increased susceptibility to local or widespread extirpation. A review of goshawk observations during the past decade has revealed 16 confirmed or probable nesting sites in southeast Alaska. "There was a high association between goshawk nesting stands and higher volume/tree size stands: 8 (50%) of the 16 sites were clearcut or planned for timber harvest until the goshawk nests were found" (Iverson unpubl. rep.). This relationship has also been established in other parts of the goshawks range. Recent results of studies within the range of the Queen Charlotte goshawk (ADF&G 1993, Titus et al. 1994), indicated a greater frequency of relocations of radio-tagged goshawks in mature and old-growth forest. Of 18 nest trees for which habitat attributes were characterized, 16 were in old-growth and two were in second growth trees greater than 90 years of age. Of 661 radio relocations, over 90% were in habitat classified as volume class 4 or greater and 68% were in habitats classified as volume class 5 or greater (Titus et al. 1994).

Home ranges have been reported to be 2,000 to 3,200 hectares (Reynolds 1983). These home ranges may include a mosaic of habitat types, with a strong preference for mature forest with flight space beneath the canopy (Reynolds 1989, USDA Forest Service 1990). Home range size is strongly dependent upon quality of the foraging habitat and prey availability (Kenward 1982). Titus et al. 1994 reported breeding period home ranges for 16 adult goshawks in Southeast Alaska as large as 19,613 hectares and year-round home ranges as large as 114,728. hectares.

A recent review of the Queen Charlotte goshawk summarized habitat use as follows (Crocker-Bedford 1994):

"Analyses of habitat use have shown similar results throughout the geographical range of the northern goshawk in the United States. Home ranges include stands of large trees for nesting, as well as for greater abundance of some prey. The higher canopy provided by large trees, along with sparser than normal shrubs and small trees, appears to facilitate goshawk flight and prey capture. Closed canopies appear to provide preferred microclimate in the nesting stand, increased productivity of some important prey species, and reduced competition and predation by open-forest raptors. A literature review indicated that goshawk densities tend to decrease with the amount of timber harvest, and that goshawks may sometimes be impacted by forest fragmentation. In Southeast Alaska 92 percent of the relocations on radio-tagged goshawks were in old-growth forests having over 8 mbf/ac. Old-growth having over 20 mbf/ac was most preferred."

Goshawks generally select forest stands with large trees on gentle slopes at lower elevations for nesting and foraging (Reynolds 1989, USDA Forest Service 1990). Foraging habitat is generally characterized by a greater diversity of age classes and structural characteristics (e.g., snags, woody debris) than nesting areas; foraging areas also comprise the largest percentage of goshawk home ranges (Reynolds et al. 1991). Goshawks feed primarily on ground-dwelling birds and small animals.

Goshawk sensitivity to timber harvest has resulted in management recommendations to protect nest site integrity (USDA Forest Service 1990, USDA Forest Service 1991a, USDA Forest Service Alaska Region 1992, USDA Forest Service 1994). Other management recommendations recognized the importance of the foraging area within the post-fledging area (Crocker-Bedford 1990, USDA Forest Service 1991, and USDA Forest Service Alaska Region 1992). There is now widespread recognition of the importance of most foraging habitat, including areas far from the nesting site (Reynolds 1989, USDA Forest Service 1990, Crocker-Bedford 1990, Crocker-Bedford 1991, Crocker-Bedford 1992, USDA Forest Service 1992, Marshall 1992).

Twenty-one goshawk nest areas were documented in Southeast Alaska with activity between 1990 and 1993 (Titus et al. 1994). At least one nest site was located at 18 of these areas, including 8 active nests in 1993. In 1994, a total of 33 historic and current sites with at least one nest were documented; active nests were located at 21 of these sites (ADF&G 1994). Goshawk nesting has not been observed in the Upper Carroll Project Area.

Inventories were conducted in the Project Area during the summers of 1993, 1994 and 1995 by Ketchikan Ranger District personnel utilizing the Alaska Region Goshawk survey protocol. Goshawk calls were broadcast from more than 255 call stations. There were not any responses to the calls and no confirmed sightings, although telemetry results from the goshawk pair in Traitors Creek reveal that those birds do forage in the Carroll Creek drainage. More than 74 biologist days were spent surveying the Project Area. Although the inventory techniques were among the best available, there is a high likelihood that nests were missed even in the stands that were sampled (Kimmel, J. T. and R. H. Yahner 1990; Kennedy et al., in press; and ADF&G 1992 Goshawk Survey Progress Report). Any pairs of goshawks missed to date will not be protected unless chance observations are made during the timber sale layout process.

On August 18, 1992, the Alaska Region issued Interim Management Guidelines for the goshawk on the Tongass National Forest. A review and evaluation of the guidelines will occur. All units laid out for the Final EIS will follow the management guidelines for goshawks in effect at the time of layout.

Effects of Upper Carroll Proposed Action on Population or Habitat

None of the alternatives propose timber harvest of known nest areas or designated post fledging areas. Goshawks have been observed in the Carroll Creek drainage via telemetry tracking of radio-tagged goshawks in Traitors Creek area. These birds are foraging in the Project Area, so any alternative that harvests timber in the Carroll Creek drainage has the potential to affect goshawks. Alternatives 2 and 5 have harvest timber in the immediate vicinity of the goshawk relocations, so would have the greatest potential to effect goshawks.

Any pairs of goshawks not discovered prior to timber harvest may be affected if the harvest units correspond to key stands of habitat. Any goshawk nest found prior to harvest will be protected utilizing the current goshawk management guidelines, which normally provide more careful management only within the post fledging area. Therefore, the Upper Carroll Project may effect northern goshawks.

HARLEQUIN DUCK (*Histrionicus histrionicus*)

Distribution and Population

The harlequin duck's range is divided into two separate and distinct regions: eastern and western. The eastern range embraces Iceland, parts of Greenland, and Labrador, with the winter range extending as far south as New Jersey. The western range includes northeast Siberia west to the Lena River, east to the Kamchatka Peninsula and the Commander Islands and north to the Arctic Circle, then across the Bering Sea to the Aleutian Islands, much of interior Alaska, and south to northwest Wyoming and central California (Bellrose 1980). For Alaska, the harlequin duck has been reported as a fairly common year-round resident, and at one season or another, has been recorded over much of the State, except the Arctic coast (Gabrielson and Lincoln 1959):

Available evidence indicates that the species breeds locally over much of southern Alaska, probably the Aleutians, and north to Anaktuvuk Pass. All ornithologists who have worked during the spring and summer months in the Alexander Archipelago and other parts of Southeast Alaska, have commented upon the numbers of these ducks, frequently summarizing their observations by stating that they were common or abundant (Gabrielson and Lincoln 1959).

Harlequins nest along inland rivers and streams. Usually the nest site is usually 6 feet (but up to 60 feet) from water (DeGraff et al. 1991). The site chosen usually has shelter overhead - a recess in a stream bank, or among rocks, or under shrubs, trees, or stranded debris. Occasionally the nest is in an open area, but under shrubbery of other low vegetation, or even on a stream bar. There is no proof that harlequins nest in tree cavities (Bellrose 1980; Armstrong et al. 1983; Kortright 1962; Godfrey 1979; Palmer 1975). During the winter the harlequin duck is common to abundant in the coastal waters of Southeast Alaska, Prince William Sound, Cook Inlet, the bays of the Alaska Peninsula, the Aleutians and the Pribilofs (Gabrielson and Lincoln 1959). Preferred winter habitat is reported to be areas along surf-pounded rocky coasts -- not in sheltered bays and fjords, but instead where water is one to two fathoms deep and turbulent, and where bottom fauna abounds (Palmer 1975).

Harlequins feed on molluscs, crustaceans, insects, fish, and echinoderms (Bellrose 1980).

Effects on Population or Habitat

Nesting habitat for the harlequin duck occurs along inland rivers and streams. Riparian habitats along all rivers and streams on the Forest will be managed according to the Stream and Lake Protection management prescription or a more restrictive management prescription (such as when a stream or river is in a Wilderness Area). The Stream and Lake Protection Management Prescription is on pages 3-180 to 3-205 of the TLMP Revision SDEIS Proposed Revised Forest Plan and have been adopted by the Upper Carroll Project. Nesting habitat requirements are expected to be maintained. Since winter habitat occurs in the marine environment, in areas of high surf and rocky beaches, no effect on harlequin ducks is anticipated with any alternatives of the Upper Carroll Project.

OLIVE-SIDED FLYCATCHER (*Contopus borealis*)

Distribution and Population

The olived-sided flycatcher breeds in wooded regions from central Alaska east to Newfoundland and south to northern Baja California and central Arizona in the west, central Minnesota

and northern Michigan in the Central States, and North Carolina and Tennessee in the East. The species winters in South America.

It inhabits open coniferous forests and forest edges along lakes, streams, and muskegs (Bent 1942). Godfrey (1979) described the habitat of the species as "Burntlands with standing dead trees, bogs, lakeshores with water-killed trees, lumbered areas, and other clearings in woodland". DellaSala et al. (1994) noted that the species was often observed using habitats associated with lakes and muskegs during a breeding bird study on central Prince of Wales Island.

Effects of Upper Carroll Proposed Action on Population or Habitat

Riparian habitats along all lakes, rivers, and streams on the Forest will be managed according to the Stream and Lake Protection management prescription or a more restrictive prescription (such as when a stream or river is in a Wilderness Area). The Stream and Lake Protection management prescription is on pages 3-180 to 3-205 of the Proposed Revised Forest Plan in the TLMP Draft Revision (1991b) and has been adopted by the Upper Carroll Project.

Upland habitat value for the olive-sided flycatcher may improve due to logging in the Upper Carroll Project. Created openings will produce greater edge, and if reserve trees and snags are retained, flycatcher habitat could actually be improved. Therefore, the Project may affect olive-sided flycatcher habitat, though the effect is likely to be positive.

SPOTTED FROG (*Rana pretiosa*)

Distribution and Population

The spotted frog occurs in or near fresh water and is believed to range south from the Taku river, other transboundary rivers and some islands of Southeast Alaska and British Columbia (Holmberg, April 17, 1992). Spotted frogs have been documented in the Stikine River basin (Waters 1992). Presence of spotted frogs on Revillagigedo Island has not been confirmed. Five sampling sites representing 9 water bodies were trapped or shoreline inspected for the presence of amphibians. All surveys were in the Carroll Creek drainage. No spotted frogs were found. Rough-skinned newts (*Taricha granulosa*) occurred commonly (greater than 10 individuals trapped or seen) in more than 50 percent of the sites. Western toads (*Bufo boreas*) were seen or trapped in only one pond.

Effects of Upper Carroll Proposed Action on Population or Habitat

Riparian habitats along all lakes, rivers and streams on the Forest will be managed according to the Stream and Lake Protection management prescription or a more restrictive management prescription (such as when a stream or river is in a Wilderness Area). The Stream and Lake Protection Management Prescription is on

pages 3-180 to 3-205 of the TLMP Revision SDEIS and have been adopted by the Upper Carroll Project. With implementation of Stream and Lake Management Prescriptions, no effects on the spotted frog is anticipated by the Upper Carroll Project, even if they are found to occur within the Project Area.

BULL TROUT (*Salvelinus confluentus*)

Distribution and Population

Although the range of Bull trout in the contiguous United States has become greatly restricted in recent times (Goetz as cited in Haas and McPhail 1991), it still exists as far south as the Oregon-California border, north through Canada and in the Yukon River system in Alaska (Haas and McPhail 1991). Bull trout are largely confined to interior regions throughout their distribution, only reaching the Pacific coast in the Puget Sound area of Washington and in the Fraser River drainage in British Columbia (Haas and McPhail 1991). Since bull trout have only been observed in the interior drainage of other major river systems, it is not likely that bull trout occur in the streams of the Upper Carroll Project Area.

Effects of Upper Carroll Proposed Action on Population or Habitat

Riparian habitats along all lakes, rivers and streams on the Forest will be managed according to the Stream and Lake Protection management prescription or a more restrictive management prescription (such as when a stream or river is in a Wilderness Area). The Stream and Lake Protection Management Prescription is on pages 3-180 to 3-205 of the TLMP Revision SDEIS and have been adopted by the Upper Carroll Project. With implementation of Stream and Lake Management Prescriptions, no effects on the bull trout is anticipated by the Upper Carroll Project, even if they are found to occur within the Project Area.

CANDIDATE (Category 2) PLANT SPECIES

Aster yukonensis

This taxon is known from an area near Bettles, north of the Yukon River, and from the north side (continental side) of the St. Elias Range, north of Yakutat (Murray and Lipkin 1987). The plant would not be expected to occur in the Project Area (DeMeo 1992).

Searches for candidate and sensitive plants were made by interdisciplinary-trained teams and trained botanists of the Project Area. No observations of this species were made. Since *Aster yukonensis* is not known to occur in the Project Area, there are no anticipated effects of the Upper Carroll proposed action on its population or habitat.

Calamagrostis crassiglumis

Disjunct populations of this grass are known along the Pacific coast from Kodiak Island south to northern California. The plant grows in marshy wet areas, muddy areas near lakes, beach meadows, and rocky soil.

This plant does not grow in muskeg habitats (Muller 1991). Based on collections in Alaska and British Columbia, the plant may be found in the Project Area.

No observations of this species were made during field reconnaissance. Furthermore, this species is not known to occur in forested areas; therefore, no direct effects from timber harvest are anticipated. Changes in drainage due to roading or other activities may affect habitat and populations of the plant (DeMeo 1992). Stream, estuary, and lakeshore buffers should provide adequate protection for this plant.

Carex lenticularis var. dolia

This sedge is known to be in the coastal mountains of southern Alaska and may be expected to occur in the Project Area (DeMeo 1992).

No observations of this species were made during field reconnaissance. This species is not known to occur in forested areas; therefore, there are no effects anticipated from timber harvest (DeMeo 1992).

Montia bostockii

This small herb occurs in alpine and subalpine meadows in the Brooks Range through the Wrangell-St. Elias Range (Muller 1991). It would not be expected to occur in the Project Area.

No observations of this species were made during field reconnaissance. Since *Montia bostockii* is not known to occur in the Project Area, there are no effects anticipated from Upper Carroll timber harvest activities (DeMeo 1992).

IV. SENSITIVE SPECIES EVALUATION

OSPREY (*Pandion haliaetus*)

Ospreys occur in low numbers in Southeast Alaska during the spring/summer nesting period from late April through August. They are believed to overwinter in Mexico and Central America. All documented osprey nest sites occur outside the Upper Carroll Project Area. There are eight documented osprey nest sites and four known nesting pairs at Thomas Bay, Wrangell Narrows near Finger Point, and near the mouth of McCormick Creek on Wrangell Island (Hughes, undated, as cited in Forest Service 1991b). Nest trees in these areas consist of broken-top spruce (live or dead) and snags of western hemlock in hemlock/spruce forest types near streams or coastal beaches. Historically, the Southeast Alaska population of osprey appears to have remained stable but low. It is unknown why osprey occur in relatively low numbers in this region, but available nest sites and foraging areas do not appear to be limiting factors.

Effects of Upper Carroll Proposed Action on Population or Habitat

The Upper Carroll Project is not expected to affect nesting osprey as no known nest sites occur in the Project Area and availability of nesting and foraging areas does not appear to be a factor limiting population growth. In addition, minimal or no effect on preferred osprey habitat are expected from project activities as uncut

buffers will be maintained near streams, lakes, and coastal areas. If nests are discovered in the Project Area, standard and guidelines outlined in the Forest Plan will be followed.

TRUMPETER SWAN (*Cygnus buccinator*)

The swan is the largest waterfowl species in the world. Its present range is only a vestige of the once vast region of North America that it frequented in both summer and winter (Bellrose 1980). Trumpeter swans breeding in Alaska spend the winter along the Pacific Coast from the Alaska Peninsula to the mouth of the Columbia River, where they take advantage of open waters of saltwater estuaries and freshwater lakes and rivers. Trumpeter swans are present in the Project Area primarily during the fall and early spring migration periods and during winter. The only documented nesting trumpeter swans occur north of the Project Area at Yakutat (19 pairs). Nests in Southeast Alaska occur in wetlands and/or riparian habitat along streams, rivers, lakes and ponds.

Carroll Creek estuary and Neets Bay area are resting stops/wintering areas for swans in the Project Area.

Effects of Upper Carroll Proposed Action on Population or Habitat

Most timber harvest activity will not be in conflict with the TLMP Draft Revision (1991a) standards and guidelines for trumpeter swans, since swans are not present in the Project Area when most of the timber harvest activity occurs. There is a potential for conflict when swans are migrating through or returning to wintering areas on Carroll Creek estuary and Neets Bay. Noise from road construction, timber harvest, and hauling of logs could frighten swans away from their preferred resting and feeding areas. However, limiting timber harvest operations to periods when swans are not present (April 1 through November 1) will mitigate these potential impacts for the units that are within a half mile of the Carroll Creek estuary and Neets Bay. (see Mitigation Measures, Chapter Two). The following units are located within 0.5 miles of these areas:

1	13	14	17
24	27	28	29
30	31	32	33
34	35	36	37
38	39	40	41
42	43	44	45
47	48	87	88
89	90	99	100
103	104	105	106
107	109	110	126
133	134	135	136
137			

GOOSE GRASS SEDGE (*Carex lenticularis* var. *dolia*)

This sedge is known to occur in the coastal mountains of Alaska and British Columbia and the Rocky Mountains from Jasper, B.C., south to Glacier National Park, Montana. Its range in Alaska is limited to the alpine of coastal Southcentral and Southeast Alaska and the Aleutian Islands. There are nine documented occurrences in Alaska (Forest Service 1994), in Southeast, at the Mendenhall Glacier, Bailey Bay on Cleveland Peninsula, and the Chickamin Glacier. This species is not known to be found within the Project Area. Its habitat is wet alpine meadows and bare edges of snowbeds.

No observations of this species were made during field reconnaissance of harvest units and roads. This species is not known to occur in forested areas; therefore, there are no effects anticipated from timber harvest.

Edible Thistle (*Cirsium edule*)

This regionally endemic thistle species is distributed primarily along coastal Oregon, Washington, and British Columbia and barely reaches southern most Southeast Alaska. The only documented occurrence is near Hyder in interior Southeast Alaska near the border of Canada (Forest Service 1994). It is unknown whether this species occurs in the Project Area. Its habitat in Alaska is characterized as wet meadows and open woods along glacial streams.

No observations of this species were made during field reconnaissance and no sightings have been documented in the Project Area. Since timber harvest activities generally avoid wet meadows and stream margins where this species would be expected to be found, no direct effects from timber harvest are anticipated even if the species were to occur in the Project Area.

DAVY MANNAGRASS (*Glyceria leptostachya*)

This grass species is distributed from Southeast Alaska to central California. Its distribution in Alaska is limited to central and southern Southeast Alaska. It is known to occur in only two documented locations: near Wrangell, Alaska and on Prince of Wales Island, however it is easily overlooked and likely to be more widespread in Southeast (Forest Service 1994).

During botanical surveys in the Project Area, several specimens were collected that appeared to be *Glyceria leptostachya*. These specimens have been sent to other botanists for consensus. This species was found in a muskeg in the vicinity of harvest unit 21 (unit 313 in the NOI).

One observation of this species was probably made during field reconnaissance in the vicinity of harvest unit 21 (unit 313 in the NOI). The population was located in a small muskeg below harvest unit 22 (unit 327 in the NOI). No impacts to this population as a result of road construction and timber harvest are anticipated because stream and lakeshore buffers should provide adequate protection for this plant.

WRIGHT FILMY FERN (*Hymenophyllum wrightii*)

This fern species occurs in coastal areas of Southeast Alaska and British Columbia. Three sightings have been documented in Alaska and are limited to Biorka and Mitkof Islands (Forest Service 1994). It is unknown if the species occurs in the Project Area. This species appears to prefer humid shaded boulders, cliffs, tree trunks, and damp woods in the wettest maritime regions. In Alaska, it has been found in small populations on the base of trees and rock outcrops in damp woods.

No observations of this species were made during field reconnaissance and no sightings have been documented in the Project Area. Since Wright filmy fern is not known to occur in the Project Area, no effects are anticipated from Upper Carroll timber harvest activities. However, potentially undetected specimens could be affected by the removal of trees from damp woods of the Project Area.

TRUNCATE QUILLWORT (*Isoetes truncata*)

This rooted aquatic species is known from a few widely isolated populations on Vancouver Island and southcentral Alaska on the Copper River Delta (Forest Service 1994). It is unknown if this species occurs in the Project Area. Truncate quillwort occurs in shallow water of lakes and streams.

No observations of this species were made during field reconnaissance and no sightings have been documented in the Project Area. Furthermore, due to its rooted aquatic nature, this species does not occur in forested areas.; therefore, no direct effects from the Upper Carroll Project are anticipated. Even if the species does exist in the Project Area, stream and lakeshore buffers should provide adequate protection for this plant.

CALDER LOVAGE (*Ligusticum calderi*)

This plant species occurs in British Columbia and southcentral and Southeast Alaska. Documented occurrences in Alaska are limited to two disparate areas at Kodiak Island and Dall Island (just west of Prince of Wales Island) in Pleistocene refugia on limestone substrate (Forest Service 1994). It is unknown if this species occurs in the Project Area. Calder lovage occurs on rocky cliffs, open boggy or rocky slopes, and edges of coniferous forests. In Alaska it is known from alpine meadow habitats and edges of subalpine mixed coniferous forest.

No observations of this species were made during field reconnaissance and no sightings have been documented in the Project Area. Since Calder lovage is not known to occur in the Project Area, no effects are anticipated from Upper Carroll timber harvest activities. However, potentially undetected specimens could be affected by the removal of timber along subalpine coniferous forest edges.

CHORIS BOG ORCHID (*Platanthera chorisana*)

In Alaska, this bog orchid species is limited to the Aleutian Islands and southern coastal areas (Forest Service 1994). Eight occurrences have been documented in Alaska, primarily from the Aleutians. Elsewhere in Alaska, reported sightings are disjunct and infrequent and are limited to areas near Juneau (primarily Chichagof Island) and Prince William Sound. Recent botanical surveys on Revillagigedo Island have revealed a minimum of 12 populations of this species, 6 of them within the Upper Carroll Project Area. This species has been found in the vicinity of harvest units 310 and 385, and adjacent to a small pond in the Carroll Creek drainage. This species has also been found on Revillagigedo Island in the Mahoney Lakes area.

This species has also been found in a number of other locations on Revillagigedo Island this summer. With the increasing number of observations, it is possible that this species is not as rare as previously thought. With more surveys planned in the Project Area, it is likely that more populations of Choris bog orchid will be found. Three populations of Choris bog orchid were found in the vicinity of harvest unit 20 (unit 310 in the NOI), two of the three populations are protected as a result of implementing stream buffers. The third population is located in a muskeg in which the access road to unit 20 will go through. It is very likely that the road can be located to avoid the small population of Choris bog orchid. Another population was located below harvest unit 22 (unit 327 in the NOI). This population will not be affected since it is outside of the unit boundary and wood will be yarded uphill to the landing and access road. A population was also found in the planned road location to harvest unit 59 (unit 385 in the NOI). This road location will be reviewed to determine the feasibility of relocating the road. This population of Choris bog would likely be destroyed if a feasible route around it is not found. The risk of impacts to the above populations are the same for all action alternative since all of these units are in Alternatives 2-5. One other population of Choris bog orchid was found at the edge of a small pond up the Carroll Creek drainage, none of the alternatives will affect this population.

It is also possible that timber harvest and road construction activities may inadvertently destroy some individual plants.

BOG ORCHID (*Platanthera gracilis*)

This species of bog orchid is limited to a small geographic range in southern most Southeast Alaska and adjacent British Columbia (Forest Service 1994). Two documented sightings have been made in Alaska near Pearse Canal and on Dall Island. It is unknown if this species occurs in the Project Area. This plant occurs in wet open meadow habitat. It is undetermined whether the taxon of this species is distinct; if it is not, it may be more common than previously believed (Forest Service 1994).

No observations of this species were made during field reconnaissance of harvest units and roads. This species is not known to occur in forested areas; therefore, there are no effects anticipated from timber harvest or road construction activities.

LOOSE-FLOWERED BLUEGRASS (*Poa laxiflora*)

The distribution of this grass species is scattered between Southeast Alaska and Oregon. Seven sightings have been documented in Southeast Alaska near Hoonah, Sandborn Canal at Port Houghton, and Admiralty Island (Forest Service 1994). It is not known if this species occurs in the Project Area. Loose-flowered bluegrass is associated with moist, open lowland woods and open-forest meadows.

No observations of this species were made during field reconnaissance and no sightings have been documented in the Project Area. Since loose-flowered bluegrass is not known to occur in the Project Area, no effects are anticipated from Upper Carroll timber harvest activities. However, potentially undetected specimens could be affected by the removal of timber from harvest units encompassing open lowland woods and open-forested meadows.

STRAIGHT-BEAK BUTTERCUP (*Ranunculus orthorhynchus*)

This species of buttercup is distributed from coastal southern Southeast Alaska to adjacent British Columbia and Vancouver Island (Forest Service 1994). The closest documented occurrences to the Project Area include near Loring and Yes Bay. It is unknown if the species occurs in the Project Area. It occurs in moist, open lowland meadows and other moist open habitats.

No observations of this species were made during field reconnaissance and no sightings have been documented in the Project Area. Since straight-beak buttercup is not known to occur in the Project Area, no effects are anticipated from Upper Carroll timber harvest activities. Even if this species does occur in the Project Area, direct effects due to removal of timber from Upper Carroll harvest units are not anticipated to be significant as preferred open, moist habitats are generally avoided for timber harvest.

QUEEN CHARLOTTE BUTTERWEED (*Senecio moresbiensis*)

This species of butterweed is limited to the Queen Charlotte Islands of British Columbia and to disjunct populations in southeastern Alaska and northwestern Vancouver Island (Forest Service 1994). Five occur-

rences have been documented in Alaska on Prince of Wales, Coronation, and Dall Islands. It is not known if this species occurs in the Project Area. Queen Charlotte Butterweed occurs in shady wet areas and bogs of montane to alpine habitats, to open, rocky or boggy slopes, and in open, rocky heath or grass communities (Douglas 1982 in Forest Service 1994).

No observations of this species were made during field reconnaissance and no sightings have been documented in the Project Area. Since Queen Charlotte butterweed is not known to occur in the Project Area, no effects are anticipated from Upper Carroll timber harvest activities. Even if this species does occur in the Project Area, direct effects due to removal of timber from Upper Carroll harvest units are not anticipated to be significant as preferred open, moist habitats are generally avoided for timber harvest.

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June 5, 1987:	U.S. Fish and Wildlife Service memorandum, recommended changing the Prince of Wales flying squirrel from a Category 2 candidate species to a Category 3c candidate species.
Dec. 4, 1990:	NMFS publishes final rule in the Federal Register listing the Steller sea lion as a threatened species.
March 20, 1991:	Interagency Wildlife Technical Committee Meeting.
April 2-4, 1991:	Marbled murrelet workshop sponsored by the USFWS.
Sept. 5, 1991:	USF&W letter critique of USDA Forest Service Region 3 Management Guidelines for the Northern Goshawk in the Southwestern Region, (56 FR 122, 28853).
Dec. 17, 1991:	Status report on R10 sensitive species candidates.
Jan. 28, 1992:	Forest Service letter to NMFS requesting list of T & E species in proposed project areas.
Feb. 6, 1992:	NMFS letter listing humpback whale and Steller sea lion as being within the central Prince of Wales project area.
March 5, 1992:	Letter from USFWS concerning T & E in Lab Bay, Prince of Wales, Polk and Revilla timber sale areas.
April 8, 1992:	Phone conversation with NMFS about the status of recovery plans for whales and the Steller sea lion, and proposed regulations for approaching marine mammals.
April 8, 1992:	Letter to USFWS requesting updated list of T & E and proposed and candidate species.
April 9, 1992:	Phone conversation with the Alaska Natural Heritage Program to check on any changes in the listing of candidate plants.
April 15, 1992:	Letter from USFWS updating the list of threatened, endangered, and candidate species likely to occur on the Forest.
April 17, 1992:	Phone conversation with the USFWS clarifying that the Aleutian Canada goose is not likely to occur on the Forest.
June 24, 1992:	USDA Forest Service memo describing current status of goshawk call survey.
Aug. 13, 1992:	USF&W letter critique of USDA Forest Service Region 3 Management Guideline Revision for the Northern Goshawk in the Southwestern Region, (57 FR 119, 27424).
Aug. 18, 1992:	Interim habitat recommendations for the northern goshawk, USDA Forest Service, Alaska Region, Juneau.
Sept. 8, 1994:	Meeting with ADF&G and USFWS on Upper Carroll Project old-growth retention strategy.

Oct. 27, 1994: Letter from USFWS in response to the Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for timber harvest in the Upper Carroll Project Area.

Appendix E

Unit Crosswalk Table

Unit Crosswalk Table

Key Terms

Logging Systems Transportation Analysis (LSTA) - The design of all potential harvest units, associated logging and transportation systems.

Notice Of Intent (NOI) - Notice of a proposed action published in the Federal Register and local newspapers.

Draft Environmental Impact Statement (DEIS) - A statement of environmental effects for a major Federal action which is released to the public and other agencies prior to a final management decision.

Harvest Unit Number - Number assigned to an individual harvest unit. The number is used to track a particular unit from the planning and implementation stage on through the post sale monitoring and cultural treatments.

Unit Numbering History

The USDA Forest Service initially prepares an LSTA for each project to determine where potential harvest units and roads are located. Logging systems engineer's assign preliminary unit numbers at that time. An interdisciplinary team (IDT) of resource specialists then review the LSTA and recommend how various settings of timber should be combined into units for harvest. The Upper Carroll IDT assigned new unit numbers for those units that were reconfigured. These were the unit numbers published in the NOI and Scoping packages. It was later discovered that other national data bases used by the Forest Service only accept 3 digit unit numbers. Therefore a different unit number was assigned for the Draft EIS so that the history of the unit could be tracked through to sale implementation and beyond.

The main function of this crosswalk table is to allow the reader to relate discussions of a particular unit described in the DEIS to the map that was included in the scoping package, newspaper and NOI sent to the public in the fall of 1994.

Table E-1
Crosswalk Table

EIS UNIT NUMBER	NOI UNIT NUMBER	LSTA UNIT NUMBER
1	1000	744-524
2	1001	744-374
3	1002	744-342
4	1003	744-499
5	1004	744-498
6	1005	744-480
7	1006	744-479
8	1007	744-381
9	1008	744-389
10	1009	746-768
11	1010	744-489
12	1011	744-489
13	1012	737-754
14	1013	737-732
15	1014	734-656
16	1015	744-417
17	1016	737-639
18	1017	744-513
19	308	744-308
20	310	744-310
21	313	744-313
22	327	744-327
23	335	744-335
24	338	744-338
25	339	744-339
26	344	744-344
27	345	744-345
28	346	744-346
29	347	744-347
30	348	744-348
31	349	744-349
32	350	744-350
33	351	744-351
34	352	744-352
35	353	744-353
36	354	744-354
37	355	744-355
38	356	744-356
39	357	744-357
40	358	744-358

Table E-1
Crosswalk Table continued

EIS UNIT NUMBER	NOI UNIT NUMBER	LSTA UNIT NUMBER
41	359	744-359
42	360	744-360
43	362	744-362
44	363	744-363
45	364	744-364
46	365	744-365
47	366	744-366
48	367	744-367
49	368	744-368
50	370	744-370
51	371	744-371
52	372	744-372
53	375	744-375
54	376	744-376
55	378	744-378
56	380	744-380
57	382	744-382
58	384	744-384
59	385	744-385
60	386	744-386
61	396	744-396
62	400	744-400
63	416	744-416
64	418	744-418
65	420	744-420
66	421	744-421
67	423	744-423
68	424	744-424
69	425	744-425
70	426	744-426
71	429	744-429
72	430	744-430
73	431	744-431
74	437	744-437
75	444	744-444
76	445	744-445
77	447	744-447
78	452	744-452
79	454	744-454
80	456	744-456

Appendix E

Table E-1
Crosswalk Table continued

EIS UNIT NUMBER	NOI UNIT NUMBER	LSTA UNIT NUMBER
81	462	744-462
82	464	744-464
83	466	744-466
84	471	744-471
85	494	744-494
86	497	744-497
87	523	744-523
88	532	744-532
89	533	744-533
90	534	744-534
91	545	737-545
92	547	737-547
93	572	737-572
94	584	737-584
95	603	733-603
96	619	737-619
97	620	737-620
98	622	737-622
99	624	737-624
100	625	737-625
101	628	737-628
102	630	737-630
103	631	737-631
104	638	737-638
105	639	737-639
106	643	737-643
107	644	737-644
108	660	734-660
109	732	737-732
110	753	737-753
111	757	746-757
112	760	746-760
113	767	746-767
114	769	746-769
115	770	746-770
116	771	746-771
117	772	746-772
119	776	746-776
120	779	746-779

Table E-1
Crosswalk Table continued

EIS UNIT NUMBER	NOI UNIT NUMBER	LSTA UNIT NUMBER
121	780	746-780
122	782	746-782
123	795	746-795
124	799	746-799
125	823	746-823
126	824	746-824
127	825	746-825
128	950	737-950
129	951	744-951
130	952	744-952
131	953	744-953
132	954	744-954
133	955	744-338
134	956	744-365
135	957	744-335
136	958	744-349
137	959	744-354
138	960	744-381

Appendix F

Watershed Report

Sediment Transfer and Deposition Analysis Procedure

The Carroll River and Neets Bay watersheds were evaluated for sediment delivery and depositional potential using a watershed-level analysis (Geier and Loggy 1995). The watersheds were first divided into sub-basins and reaches as shown in Figure 1. For each sub-unit, two risk indices were developed: a Sediment Transport Index (STI) and a Sediment Deposition Index (SDI).¹ Each was composed of a series of three sub-indices based on watershed morphology, discharge and potential sediment sources. Analysis results were field reviewed by hydrologists and fisheries biologists.

Watershed Morphology

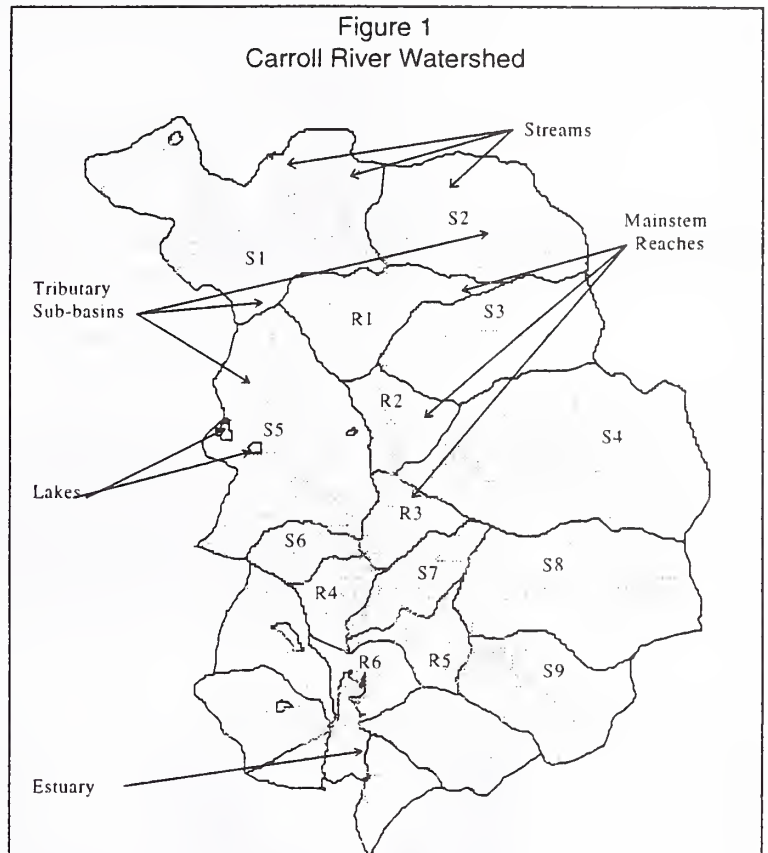
The first component of the STI characterizes the morphology of each sub-basin and reach according to transport characteristics using the product of drainage density and relief ratio (Simons *et al.*, 1980). Drainage density (total stream length/area) is used as a measure of drainage efficiency. Sub-basins or reaches with greater

stream length per unit area are more efficient at transporting sediment to the outlet. Relief ratio (basin relief/length) is used as a measure of basin energy. Sub-basins or reaches with higher relief ratios have greater gravitational energy available for sediment transport. The product is an indicator of relative sediment yield (Simons *et al.*, 1980) and used as the geomorphic component of the STI.

The geomorphic component of the SDI uses the drainage density (stream miles/mile²) of low-gradient streams (< 2%) to characterize the depositional potential of each sub-basin and reach.²

Discharge

The geomorphic component of each index is adjusted for discharge using the estimated bankfull flow (*i.e.*, 2-year flood) for each sub-basin or reach. Streams with higher discharge have greater stream power and sediment transport capacity (Brooks *et al.* 1992). Bankfull flow, which is highly-correlated with channel formation (Dunne and Leopold 1978), was used



¹ In the AWRA publication, indices were called Fish Habitat Hazard (FHH) ratings. However, they are more precisely termed sediment transport and depositional indices as used in this EIS.

² Depositional reaches were classified using the Channel Type User Guide (USFS 1992).

as the reference flow and estimated using a regional hydrologic model for Southeast Alaska (Jones and Fahl 1994).

Sediment Sources

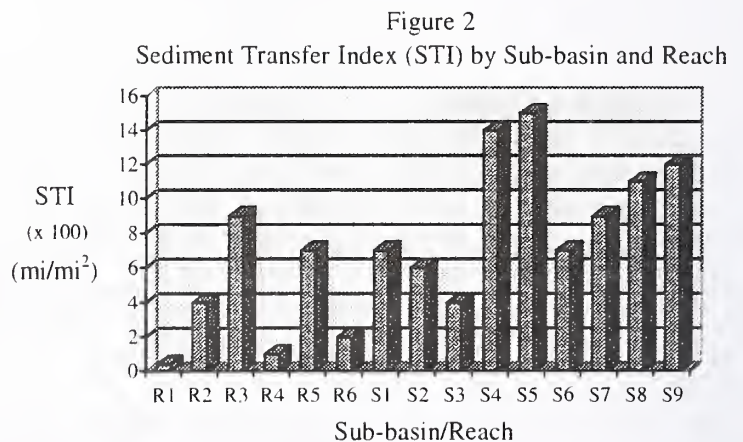
The final transport and depositional indices were derived from the discharge-weighted geomorphic components by incorporating potential sediment sources. Four major categories were used: natural sources, harvest units, roads and landslides (Geier and Loggy 1995). The final transport and depositional indices are called the Sediment Transport Index (STI) and Sediment Deposition Index (SDI), respectively.

Interpretation

The STI and SDI are quantitative measures of watershed morphology and disturbance which help identify and rank areas according to potential for sediment production and deposition. They do not provide yield estimates, sediment discharge estimates, route sediment, nor identify impact thresholds; but they do indicate the location and potential significance of sediment sources and depositional areas within the watershed based on measured characteristics known to correlate with sediment transport and deposition. In general, higher transport scores are observed in tributary sub-basins and those reaches with a relatively high gradient and discharge. Higher depositional scores are observed in reaches with a high density of large, low-gradient floodplain channels.

The Carroll River Watershed

The Carroll River Watershed covers an area of approximately 42 square miles and is comprised of numerous sub-basins and reaches as shown in Figure 1. The main channel begins in sub-basin S1 near the headwaters and flows through reaches R1, R2, R3, R4 and R6 into the estuary at the top of Carroll Inlet. The main channel is fed by nine 2nd and 3rd order tributaries which flow from sub-basins S1 through S9. A sediment analysis was performed for each sub-basin and reach under existing conditions to identify potential areas of concern.

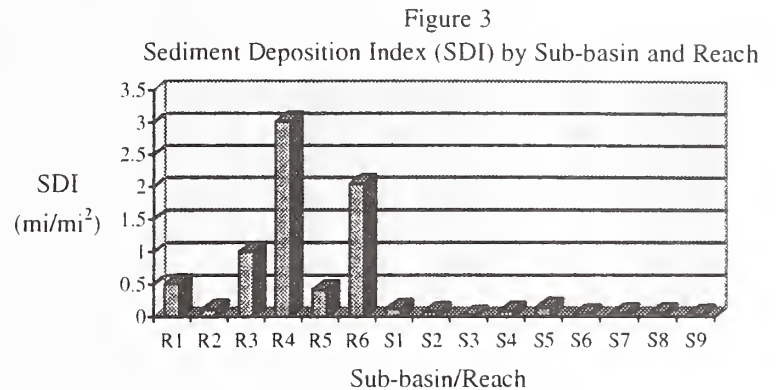


Sediment Transport Areas

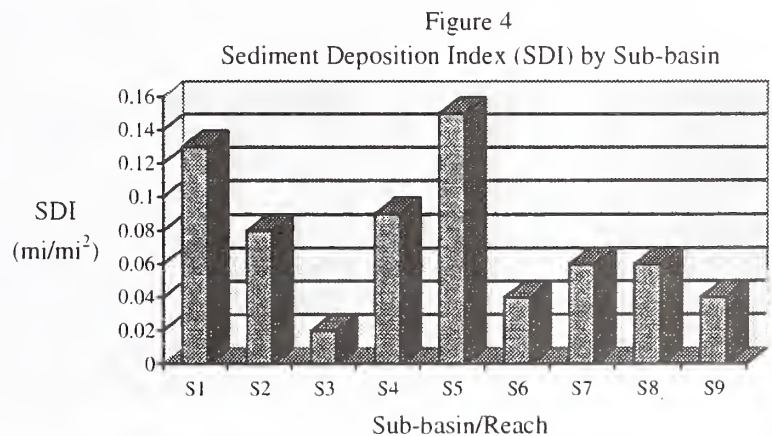
The existing Sediment Transport Index (STI) for each sub-basin and reach is shown in Figure 2. Sub-basins S4 and S5 have the highest scores followed by S9. These sub-basins have the greatest potential to transport sediment downstream in large, rapid pulses relative to other sub-basins. Other high scores are observed in R3, S7 and S8.

Sediment Depositional Areas

The existing Sediment Deposition Index (SDI) for each sub-basin and reach is shown in Figure 3. Reach R4 and R6 have the highest scores, indicating the highest density of large, low-gradient depositional channels. These areas are the most critical depositional reaches in the watershed: sediment transported from upstream areas will be deposited in these streams for



medium-to-long term storage. All sub-basins have low SDI scores relative to reaches due to the small number of depositional streams. However, SDI scores within sub-basins can highlight *localized* depositional areas which can provide important spawning and rearing habitat. Although the absolute scores are lower than for reaches, sub-basins S5, S1, S2 and S4 have significant areas of localized deposition as shown in Figure 4. The length of depositional stream within each sub-basin and reach are shown in Table 1.



Watershed Hydrology

The sediment analysis can be used to identify important hydrologic processes at the watershed level. Streams draining sub-basins S1 and S2 flow into the mainstem channel in reach R1, which is a moderate size, low gradient floodplain channel (low STI). After flowing out of reach R1, the stream gradient increases significantly in reach R2 and flows through a section of moderate gradient, highly incised channels in R3 as indicated by the high STI score (Fig. 2). The mainstem channel in R3 is a high energy stream with a series of cascades and falls that drains the upper portions of the watershed. Water flowing out of R3 empties into R4: a large, low gradient depositional channel with multiple bars, side channels and accumulations of

sediment and large woody debris (LWD). Finally, flow leaving R4 enters R6; a larger, single thread channel with considerable tidal influence and very low accumulations of LWD.

Table 1-1

Miles of Depositional and Transitional Stream by Sub-basin and Reach

	R1	R2	R3	R4	R5	R6	S1	S2	S3	S4	S5	S6	S7	S8	S9
Depositional	2.8	0.3	1.2	2.9	0.8	1.4	1.1	2.5	0.3	0.4	1.8	0.6	1.3	0.0	0.0
Transitional	0.0	0.0	0.0	0.0	1.3	0.0	3.3	0.1	0.2	3.6	2.4	0.0	0.0	2.6	1.3
Total	2.8	0.3	1.2	2.9	2.1	1.4	4.4	2.6	0.5	4.0	4.2	0.6	1.3	2.6	1.3

Source: Ketchikan Area GIS query.

Critical Areas within the Watershed: R3, R4, S4, and S5

Reach R3 is a critical reach from in terms of both fisheries and hydrology (Fig. 1). From the fisheries standpoint, falls and cascades in R3 provide an effective migration barrier for anadromous fish, primarily coho salmon. As a result of the barrier, coho migration is diverted into sub-basin S5, which contains 4.2 miles of localized depositional and transitional channels (Table 1) and provides high-complexity habitat. From the hydrological standpoint, R3 drains over half of the watershed and funnels the sediment and organic debris into the depositional streams of R4.

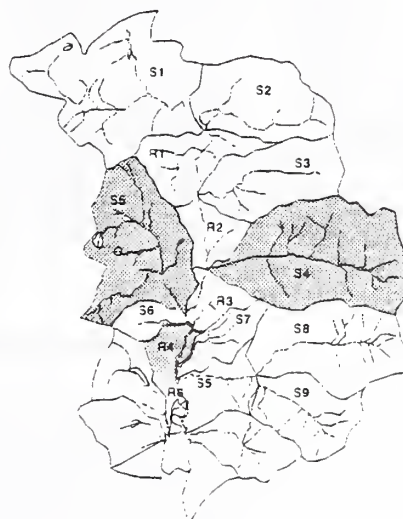
As a result, reach R4 is the most sensitive depositional reach in the watershed (Fig. 3). Discharge from over half of the watershed flows into R4 where woody debris, gravel bars and floodplains provide short and long-term storage for sediment. Fine sediment concentration in the bed increases in the downstream direction; particle size changes from cobble-boulder substrate at the inlet of R4 to sand-gravel at the outlet. Gravel substrate in the lower reaches of R4 provides considerable areas of spawning habitat for both pink and chum salmon.

Reach R4 is particularly vulnerable to sediment pulses from sub-basins S4 and S5. It is buffered from S1 and S2 by a low-gradient R1 which acts as a temporary sediment sink (Fig. 1). Sediment from S4, however, flows directly into R3 where it can be quickly transferred to depositional areas in R4. Similarly, S5 flows directly into R4 near the inlet. Sediment inputs from S4 and S5 flow relatively unbuffered into R4.

Sub-basin S4 has the second highest sediment transfer potential (STI) in the watershed (Fig. 2) with the capacity to transfer sediment readily into reach R4. In addition, S4 itself has significant resident habitat. S4 is inaccessible to anadromous fish due to downstream fish barriers. However, S4 contains 4.0 miles of depositional and transitional streams which provide high-complexity resident habitat for Dolly Varden and cutthroat trout (Fig. 4, Table 1). Excess sediment introduced into S4 would be quickly transported to resident fish habitat within the sub-basin, and subsequently through R3 to the depositional reaches in R4.

Sub-basin S5 is one of the most significant transport areas in the watershed. It has the highest sediment transfer potential (STI) of any sub-basin or reach (Fig. 2). It also has high-productivity anadromous fish habitat. Because of the barriers in R3, coho migration is diverted into S5 where low-gradient channels (Table 1, Fig 4) provide high-complexity spawning and rearing habitat. Sediment introduced into the stream system from road-building or harvest in S5 would quickly be transported to depositional reaches within the sub-basin and could significantly affect fish habitat. Potential impacts include degradation of spawning gravels, infilling of pools, and limiting access to off-channel rearing habitat.

Figure 5
Sensitive Sub-Basins and Reaches



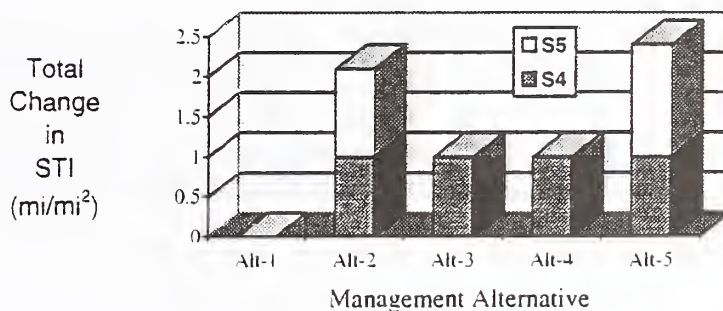
To summarize, R4, S4 and S5 are the most sensitive areas of the watershed with respect to sediment (Fig. 5). S4 and S5 have a high transport potential with 44.9% and 54%, respectively, of their areas in high mass movement soils (MMI 3 and MMI 4) (KGIS 1995). They also have localized deposition and high-complexity fish habitat in their lower reaches. Sediment transported from these sub-basins is transferred directly to depositional areas in reach R4 where it could adversely affect spawning areas for pink and chum salmon.

Discussion of Alternatives

This analysis suggests that management activity in sub-basins S4 and S5 have the highest potential for adversely affecting fish habitat. Total STI scores for sub-basin S4 and S5 are shown in Figure 6. Alternative 1 is the "no action" alternative and represents a baseline score. The highest total scores are seen for Alternatives 2 and 5, which are the only alternatives with harvest and road-building activities in S5. Management activities in sub-basin S4 are relatively constant over all alternatives. Alternatives 2 and 5 represent the highest risk in terms of sediment production, transport and deposition, while 3 and 4 represent the lowest risk.

Other areas within the watershed are not as great of a management concern. Sub-basin S6 has no programmed harvest in any alternative. Harvest and road-building activities in sub-basin S7 are projected to have minimal impact for all alternatives because 1) it is the

Figure 6
Total Change in STI for Sub-basins S4 and S5



second smallest sub-basin in the watershed (806 acres) with a low discharge and stream capacity, 2) it has only minimal amount of high mass movement potential soils (< 5%), and 3) hillslope streams in S7 flow directly into a large muskeg complex which acts as a buffer to mainstem fish habitat. Potential sediment impacts from management activities in sub-basins S8 and S9 are also projected to be minimal because 1) they have minimal levels of harvest (47 and 58 acres, respectively, for all alternatives), and 2) they enter the mainstem low in the watershed downstream of high complexity fish habitat.

Cumulative SDI scores for each management alternative are not presented because they are not particularly meaningful. The primary concern from management activities is the mobilization of excess sediment in upslope areas and subsequent transport and deposition downstream. A high SDI index identifies low-gradient areas where sediment is likely to be deposited, but impacts in high SDI areas are primarily a consequence of activities in upslope areas with a high transport index (STI). Consequently, cumulative SDI scores are not reported.

The Neets Bay Watershed

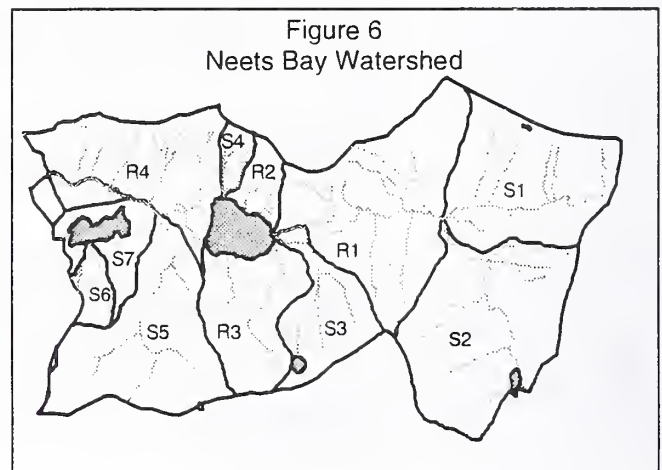
The Neets Bay Watershed covers an area of approximately 13.6 square miles and is comprised of ten sub-basins and reaches as shown in Figure 6. The main channel begins in sub-basin S1 near the headwaters, flows through reach R1 to the inlet of Bluff Lake, and continues from the outlet through reach R4 into Neets Bay. The main channel above the lake in R1 is fed by sub-basins S1 and S2 draining the headwaters. The main channel below the lake is fed by sub-basins S5 and S7. Sub-basin S4 and reaches R2 and R3 empty into Bluff Lake. A sediment analysis was performed for each sub-basin and reach under existing conditions to identify potential areas of concern.

Sediment Transport Areas

The existing Sediment Transport Index (STI) for each sub-basin and reach is shown in Figure 7. Sub-basins S3 and S4 have the highest STI scores, followed by S6. These sub-basins have a higher potential than other sub-basins to transport sediment downstream in large, rapid pulses.

Sediment Depositional Areas

The existing Sediment Deposition Index (SDI) for each sub-basin and reach is shown in Figure 8. Mainstem reaches R1 and R4 have the highest scores, indicating the highest density of large, low-gradient depositional channels. These areas are the primary depositional reaches in the watershed; sediment transported from upstream areas will be deposited in these streams for medium-to-long term storage. All sub-basins have low SDI scores relative to reaches due to the small number of depositional streams.



Discussion

Areas with the highest STI are S3 and S4 which drain into Bluff Lake (Fig. 6 and 7). These are steep sub-basins with 61 and 76% of their area, respectively, in soils with high to very high mass movement potential (MMI 3 & 4). S4 has the highest relief ratio and drainage density in the watershed (0.58 ft/ft

and 9.6 mi/mi², respectively), which means that it has the most gravitational energy available for sediment transport and the most efficient drainage network. However, S4 is a small drainage with low discharge (est. $Q_2 = 73$ cfs). Sub-basin S3 does not have the gravitational energy nor drainage efficiency of S4, but it has higher discharge (est. $Q = 261$ cfs), which translates to higher stream power and capacity for sediment transport.

Reaches R2 and R3 also drain into Bluff Lake (Fig. 6). They contain steep slopes draining headwall areas with 67 and 61% of their area, respectively, in MMI 3 and MMI 4 soils. The STI is not applicable to R2 and R3 because flow is not concentrated through an outlet, but rather occurs as a series of 1st order streams draining the hillsides. As a result, the capacity of individual streams in these areas to transport sediment is low, but landslides and debris torrents on the steep hillsides can move large amounts of sediment directly into Bluff Lake.

Discharge from sub-basins S5, S6 and S7 enter the mainstem between the outlet of Bluff lake and Neets Bay (Fig. 6). S5 has the fourth highest transport potential in the watershed, while S6 has the third highest (Fig. 7). However, S6 is nested in S7 and drains into Neets lake before entering the main channel. S7 enters the mainstem midway between Bluff Lake and salt water, but most of the area drains into Neets Lake. Consequently, the transfer index (STI) for S7 is very low (Fig. 7).

The hydrology of the Neets Bay watershed has to be interpreted in terms of management concerns. The watershed has no anadromous fish habitat due to migration barriers in the lower reaches. Consequently, there are no spawning or winter rearing habitat concerns for salmon in the stream itself. However, the system does contain resident populations of cutthroat trout and Dolly Varden. In addition, the Southern Southeast Regional Aquaculture Association (SSRAA) operates its largest hatchery at the outlet of the watershed. Each year the facility spawns and rears large numbers of chum salmon, along with smaller numbers of coho and king

Figure 7
Neets Bay STI by Sub-basin and Reach

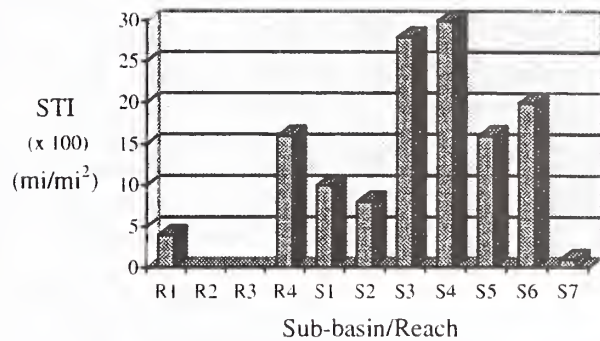
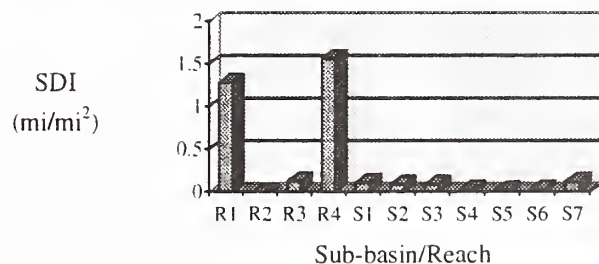


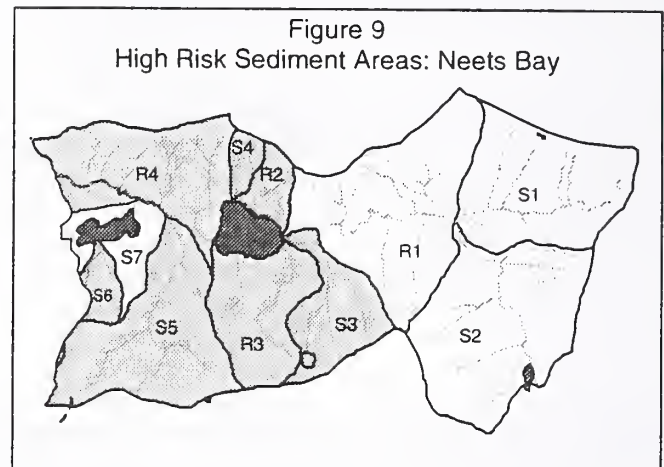
Figure 8
Neets Bay Sediment Deposition Index (SDI)



salmon to various life-stages. Eggs are incubated until fry emerge and become sufficiently mature to be outplanted to remote release sites. The eggs, in particular, are extremely sensitive to suspended sediment which can clog pores and cause suffocation, as well as effect the gill membranes of fry. For this reason, the STI should be interpreted conservatively.

Results of the sediment analysis suggest that that sub-basins S3, S4 and S6 represent areas of highest risk, followed by S5 and reach R4 (Fig. 9). Within this watershed, however, reaches R2 and R3 must also be considered because fine sediment introduced into the Bluff Lake from adjacent hillslope failures can remain in suspension and move downstream to affect the hatchery. Higher risk areas are shaded gray in

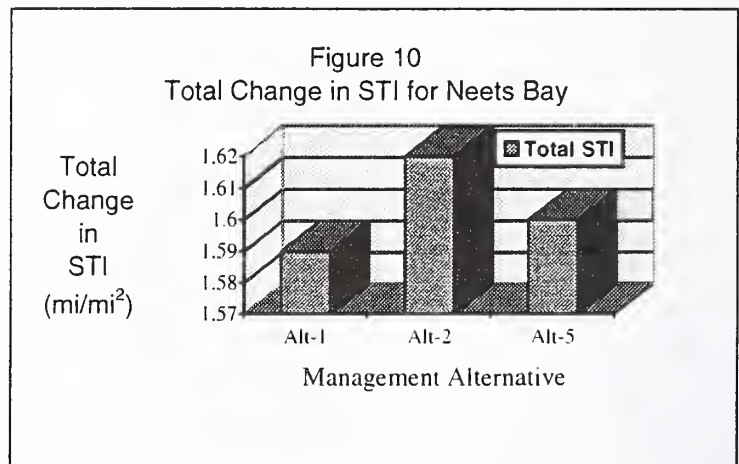
Figure 9. The analysis also suggests that S1 and S2 are the lowest risk areas in the watershed with regard to the hatchery because of 1) low STI scores, and 2) two long intervening reaches of low-gradient stream and a lake which tend to buffer sediment pulses from these areas.



Discussion of Alternatives

Two alternatives for the Upper Carroll project area propose management in the Neets Bay Watershed. Alternative 5 proposes 71 acres of harvest and 2.0 miles of road in sub-basins S1 and S2, which are some of the lowest risk areas in the watershed. Alternative 2 is identical to Alternative 5, but

proposes an additional 73 acres of harvest and 3.1 miles of road in reaches R1 and R2, along with 29 acres of harvest in the upper reaches of R4. Of these activities, potential slope failures associated with roads in reaches R1 and R2 present the highest sediment risk. Total STI scores each alternative are shown in Figure 10. Alternative 1 is the "no action" alternative and represents a baseline score. The highest total score is seen for Alternative 2, which represents the highest risk in terms of sediment production, transport and deposition.



As discussed earlier, total SDI scores are not presented because they are not particularly applicable for assessing sediment risk.

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Appendix G

LTF Reconnaissance Report USDC National Marine Fisheries Service Report Alaska Timber Task Force Siting Guidelines



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 1668
Juneau, Alaska 99802

September 27, 1983

ENCLOSURE

Mr. Win Green
Forest Supervisor, Ketchikan Area
Tongass National Forest
Federal Building
Ketchikan, Alaska 99901

Dear Mr. Green:

As requested in your July 29, 1983, letter, attached is our investigation report and recommendations for some of the potential log transfer sites in your area. We appreciate the opportunity to evaluate these locations before they are formally presented in an environmental impact statement. This early involvement should help prevent further complications in selecting the sites that balance timber harvest needs with marine resource values.

Give our thanks to Jim Rhodes who was very helpful in providing site suitability information, and the other Forest Service personnel who provided assistance during the field investigations. Please contact Duane Petersen (586-7235), of our Environmental Assessment Division (Juneau Office) if you have any questions regarding this report.

Sincerely,

Robert W. McVey
Director, Alaska Region



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Environmental Assessment Division
Juneau, Alaska

and

U.S. Department of the Interior
Fish and Wildlife Service
Southeast Alaska Ecological Services
Juneau, Alaska

Report of Field Investigations
Carroll Inlet, Thorne Arm, Revillagigedo Island
Tokeen Bay, Kosciusko Island
Shelikof Island, Prince of Wales Island

July 18-21, 1983

In response to a request from the U.S. Forest Service, Ketchikan area, personnel from the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) investigated a number of proposed sites to determine their suitability for use as log transfer sites. Dumping logs into estuaries, where they are formed into rafts for transport to processing centers, results in massive loss of bark that settles to the bottom, smothering sessile plant and animal life and degrading habitat for motile animal life. By investigating proposed sites, the degree of potentially harmful impacts can be determined and recommendations made as to their suitability of each site for the operation of a log transfer facility.

Sites which were investigated for this report are located on Revillagigedo Island, Prince of Wales Island, and Kosciusko Island. (Figures 1-5)

OBJECTIVES

1. Investigate subtidal habitat and associated aquatic plants and animals that would be impacted by bark accumulation introduced by log transfer.
2. Determine the extent of biological production in terms of epibenthic animals and plants.
3. Investigate possible alternative sites in order to assess relative biological productivity among the sites.

METHODS

Duane Petersen (NMFS) and Everett Robinson-Wilson (USFWS) conducted this study, utilizing SCUBA to obtain underwater observations. A transect line marked in one-meter intervals, was attached near the high water mark and extended seaward at a right angle to the shore at each study site. Observations of plant life were made at five-meter intervals

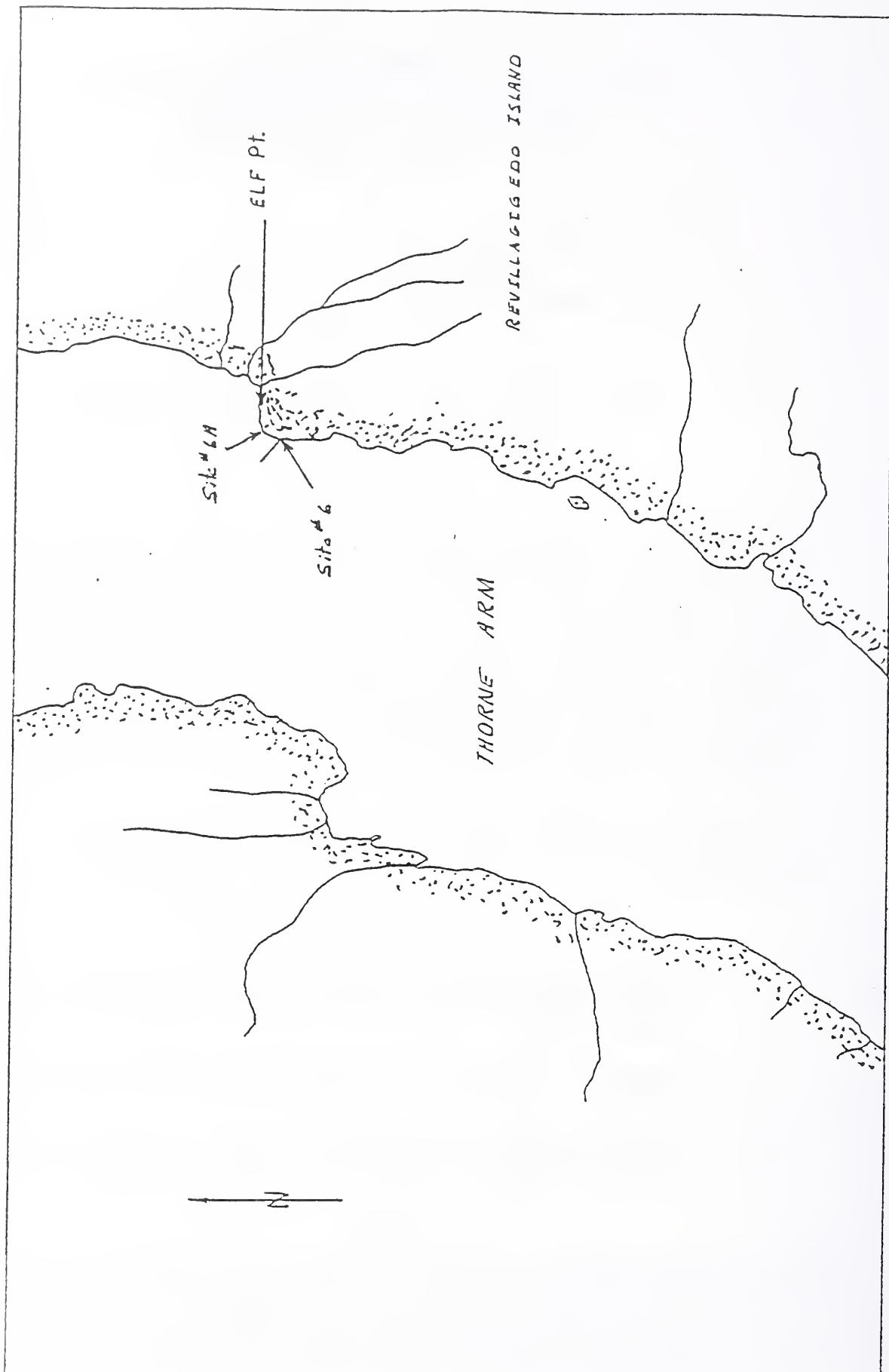


Figure 1. - Location of Sites 6, 6A, Thorne Arm, Revillagigedo Island.

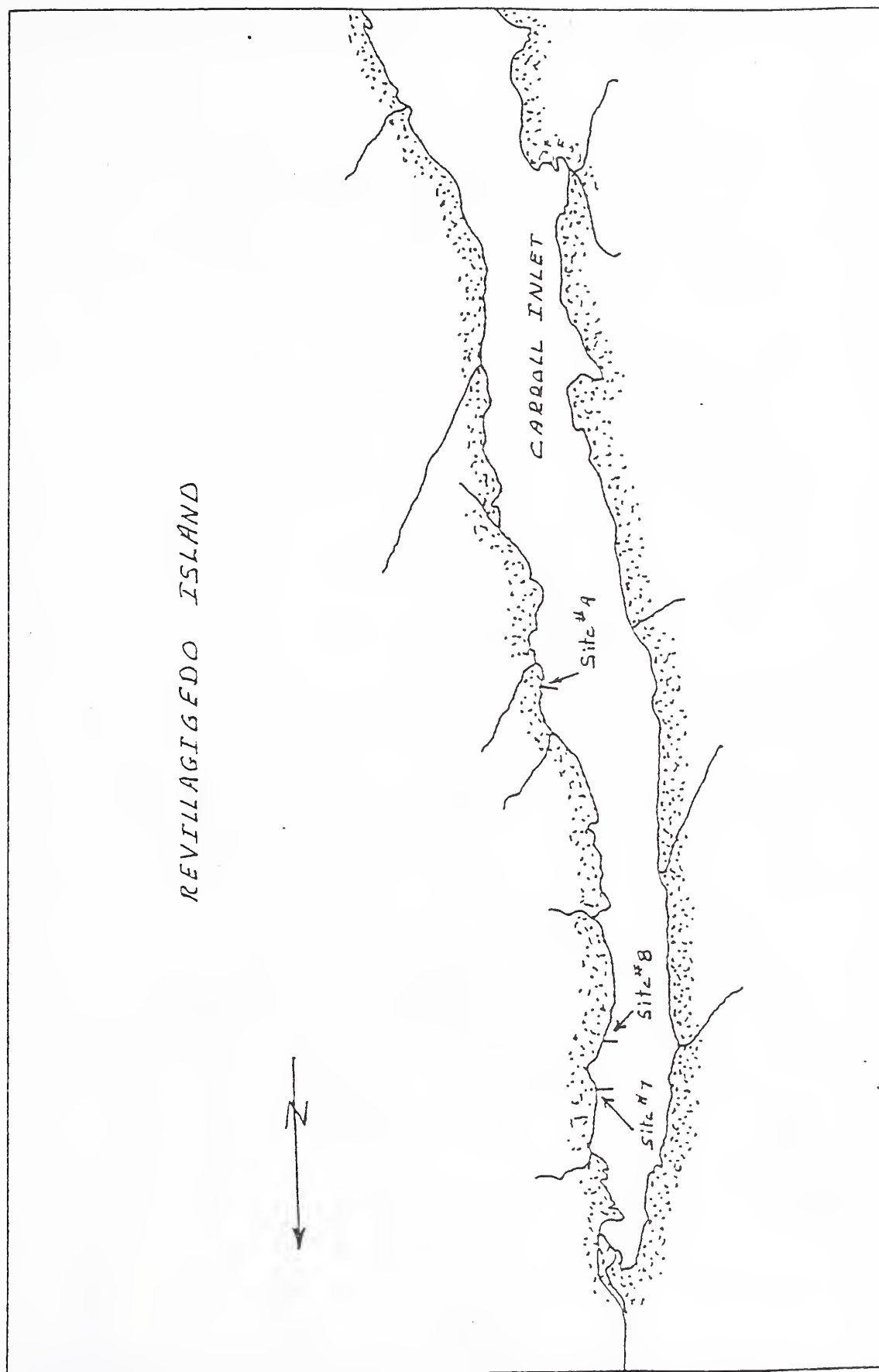


Figure 2. - Location of Sites #4, 7, and 8, Carroll Inlet, Revillagigedo Island.

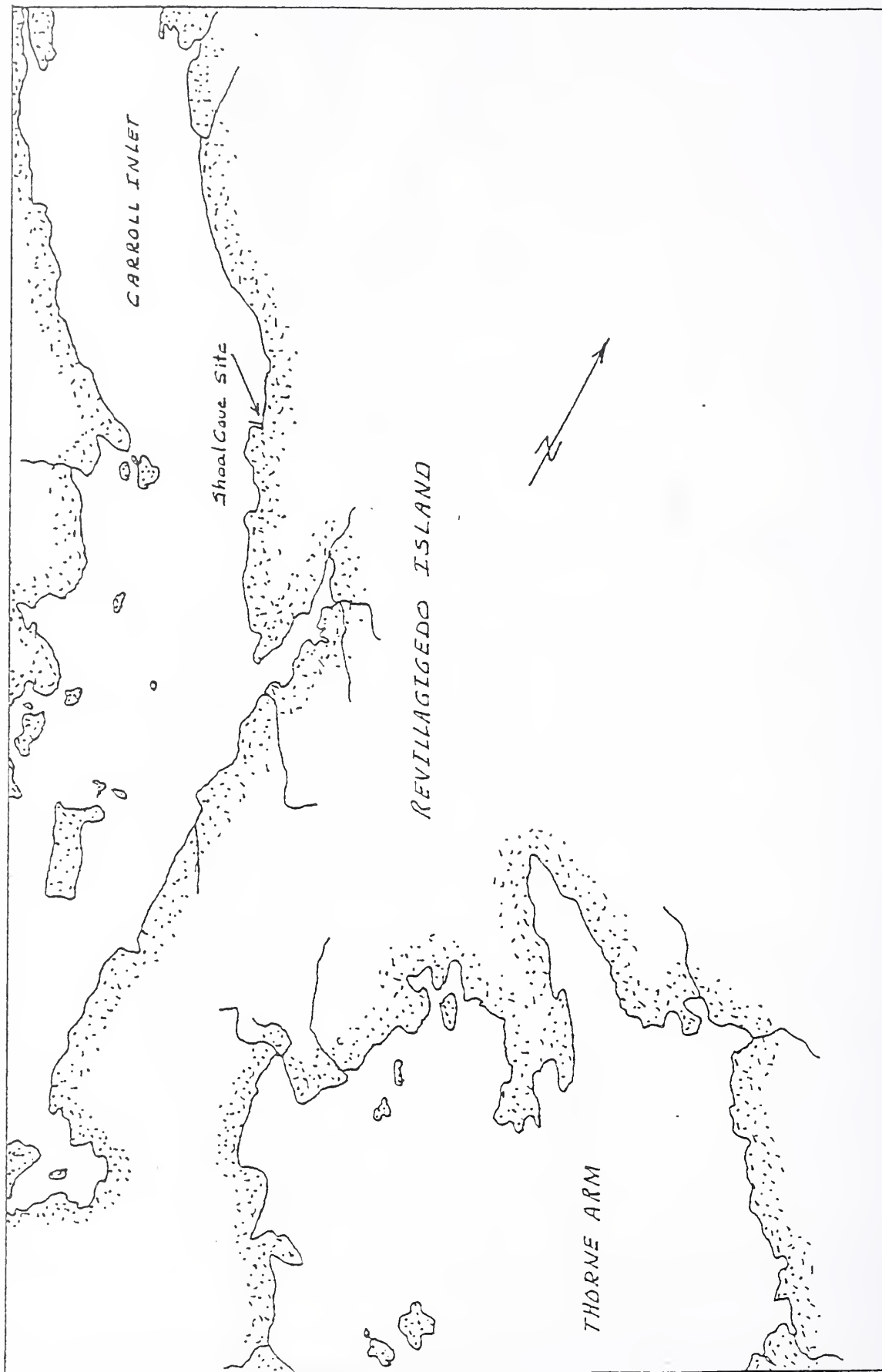


Figure 3. - Location of Shoal Cove Site, Carroll Inlet, Revillagigedo Island.

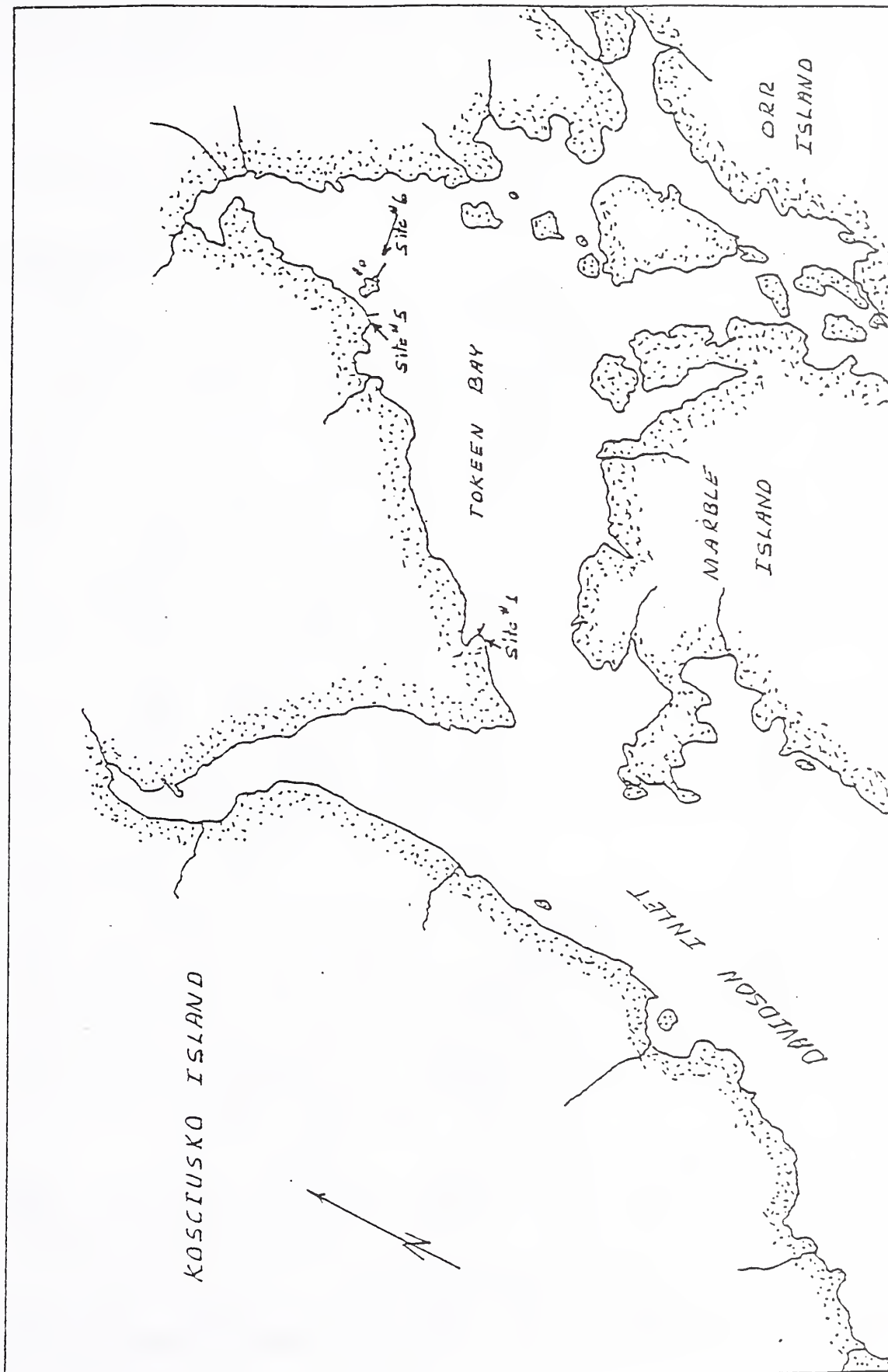


Figure 4. - Location of Sites #1, 5, 6, Token Bay, Kosciusko Island.

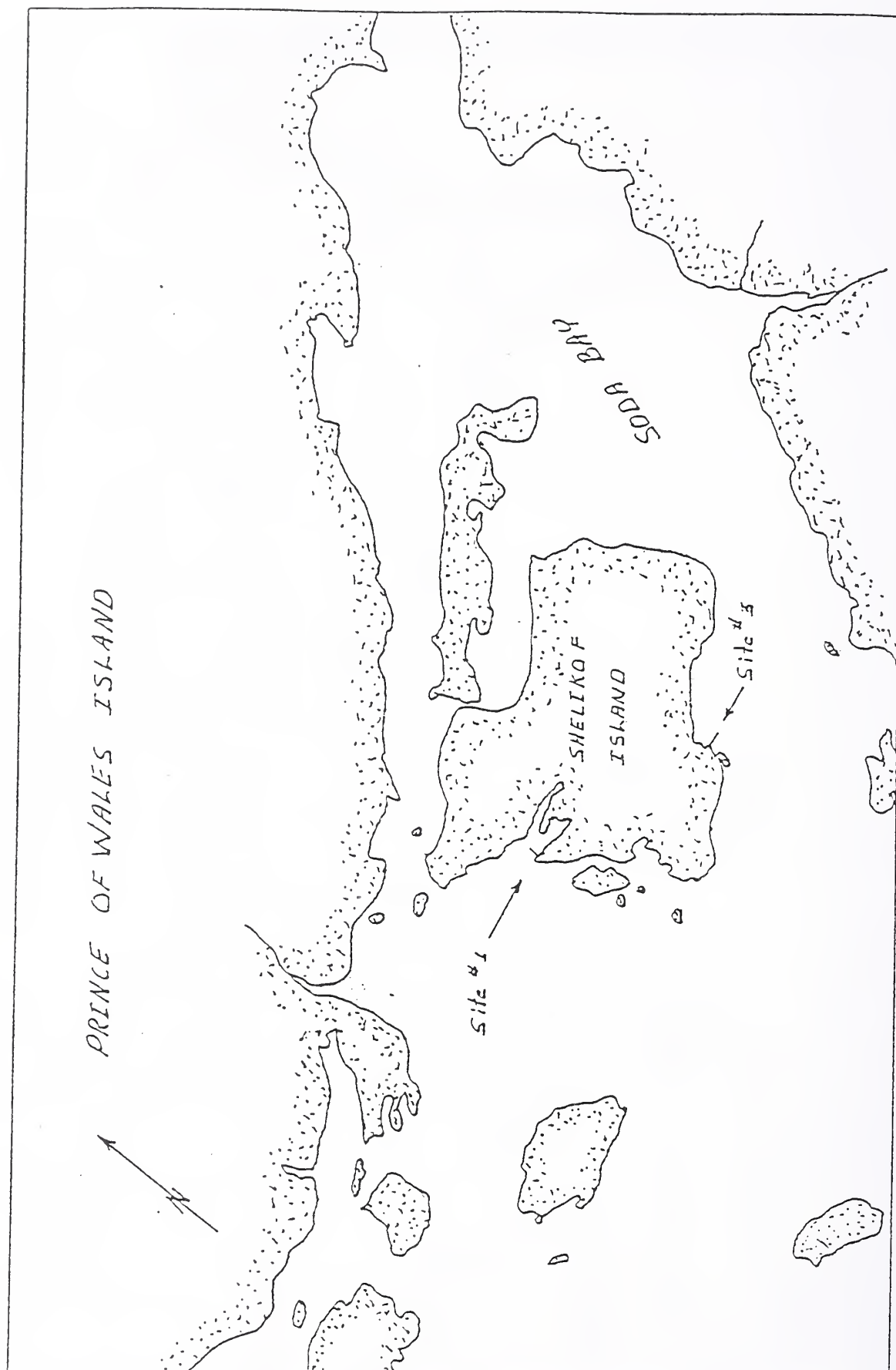


Figure 5. - Location of Sites #1, 2, 3, Shelikof Island, Soda Bay, Prince of Wales Island.

along the transect line. Animals were observed while swimming through the area. Substratum composition and depth were noted and recorded. All observations were recorded on underwater paper.

RESULTS

Following is a description of each site. Profiles of the bottom are illustrated in Figures 6-15. Animals and plants associated with each site are listed in Table 1.

Thorne Arm

Site #6 - (Figure 6). Start of dive, 1114 hours; end of dive 1139 hours. The bottom drops gently from shore along slopes of about 11 degrees to a distance of 50 meters and then drops moderately along slopes of 18 degrees for a distance of 15 meters where the dive ended in a water depth of 13.7 meters, 65 meters from shore. The divers continued to swim along the transect to 70 meters from shore where the depth was 15.2 meters. At this point the bottom slope increased very rapidly. Substratum, from shore to a distance of 45 meters, is mostly bedrock grading into boulder and cobble. Beyond 35 meters, the substratum is composed of sand and shell. Bottom current speed, 70 meters from shore, was estimated between 1-2 knots. A moderately dense band of macrophytic algae occurs to 55 meters from shore. Animal species composition is diverse and numbers of organisms are abundant in the vegetative zone, but become more sparse as the substratum becomes more sand and shell.

Site #6A - This site, Figure 1, was not investigated using a transect line. The bottom profile is similar to Site #6 except the vegetation zone extends to about 20 meters from shore. The subsurface slope is steeper (25-30 degrees) and a depth of 15.2 meters was obtained about 30 meters from shore.

Carroll Inlet

Site #4 - (Figure 7). Start of dive, 1040 hours; end of dive, 1055 hours. The bottom drops moderately along a slope of 30 degrees for a distance of 15 meters from shore and then drops moderately along an average slope of 17 degrees to 65 meters from shore; maximum water depth was 12.2 meters. Substratum, from shore to a distance of 15 meters is bedrock, boulders, and cobbles changing to gravel, sand, and mud for a distance of 50 meters and beyond. Macophytic algae occur sparsely to 15 meters from shore. Various animal species are present but species diversity and numbers of organisms were sparse.

Site #7 - (Figure 8). Start of dive, 1140 hours; end of dive 1154 hours. The bottom drops moderately along an average slope of 20 degrees to a distance of 35 meters from shore and then flattens out to beyond 50 meters; maximum water depth was 12.2 meters. Substratum, from shore to a distance of 15 meters, is mostly boulders and silt. Beyond 15 meters, the substratum is composed of silt mixed with woody debris. A sparse band of macrophytic algae occurs from shore to 25 meters. Animal species were very sparse both in diversity and numbers.

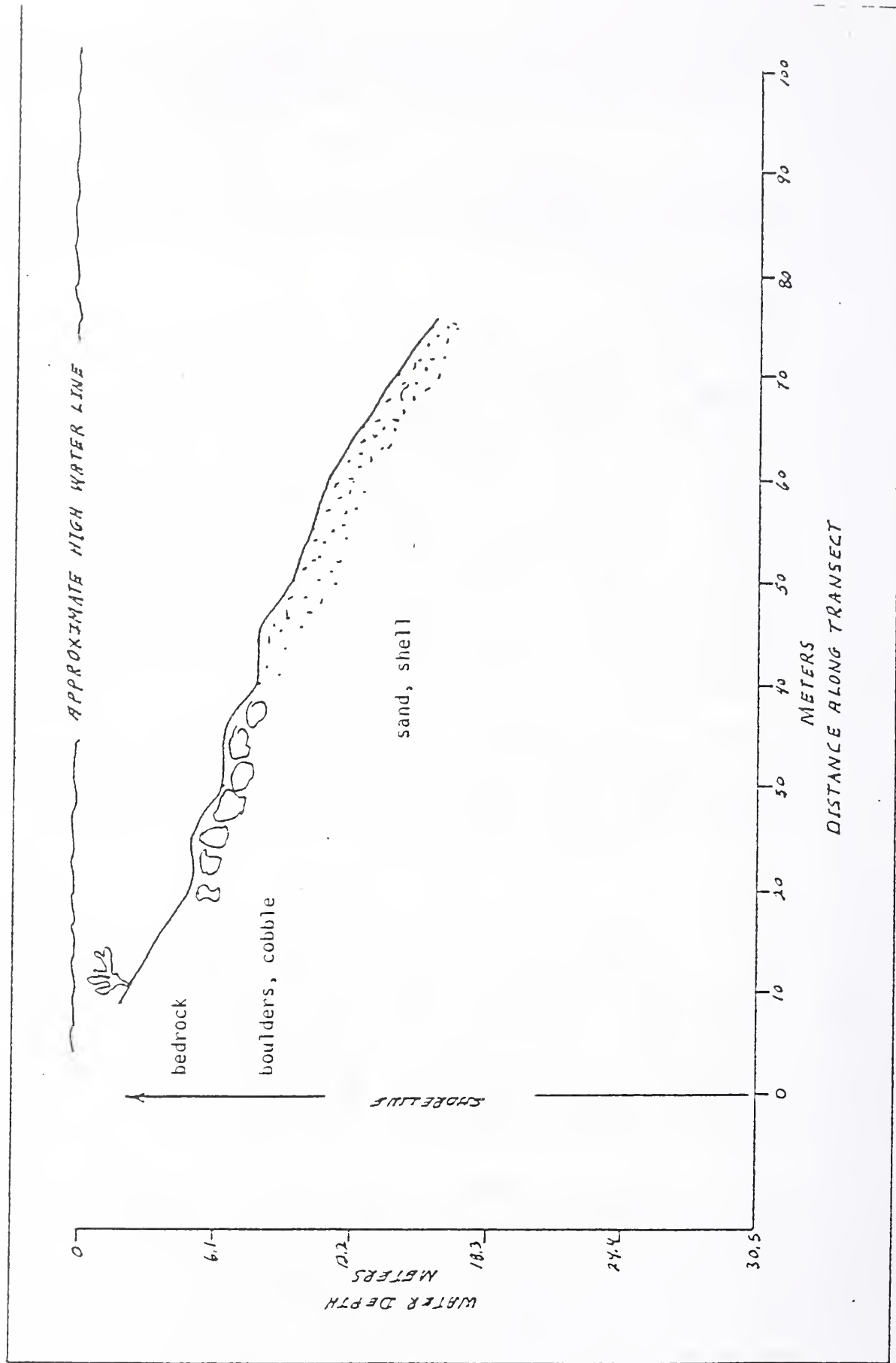


Figure 6. - Bottom profile, Site #6, Thorne Arm.

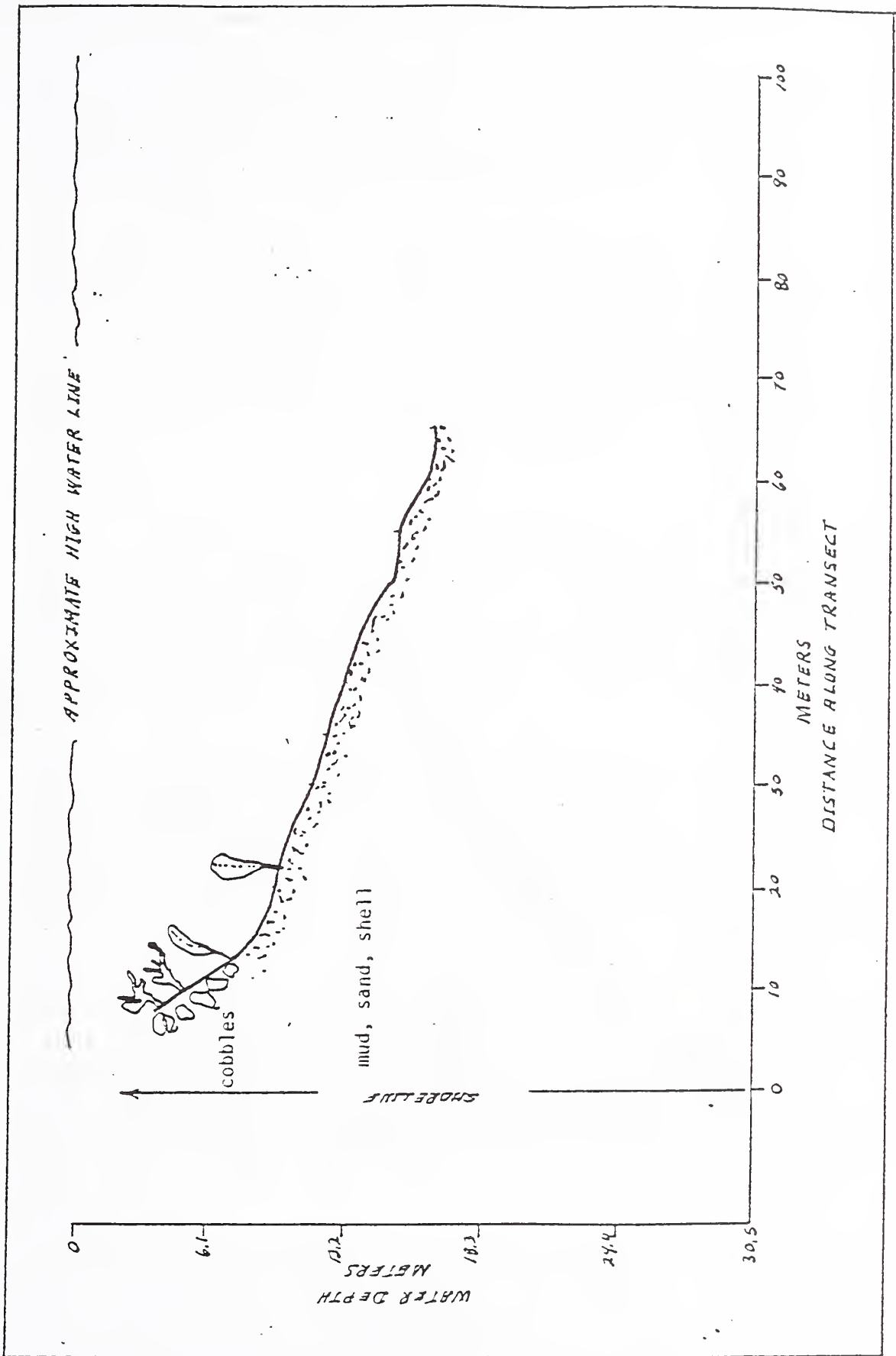


Figure 7. - Bottom profile, Site #4, Carroll Inlet.

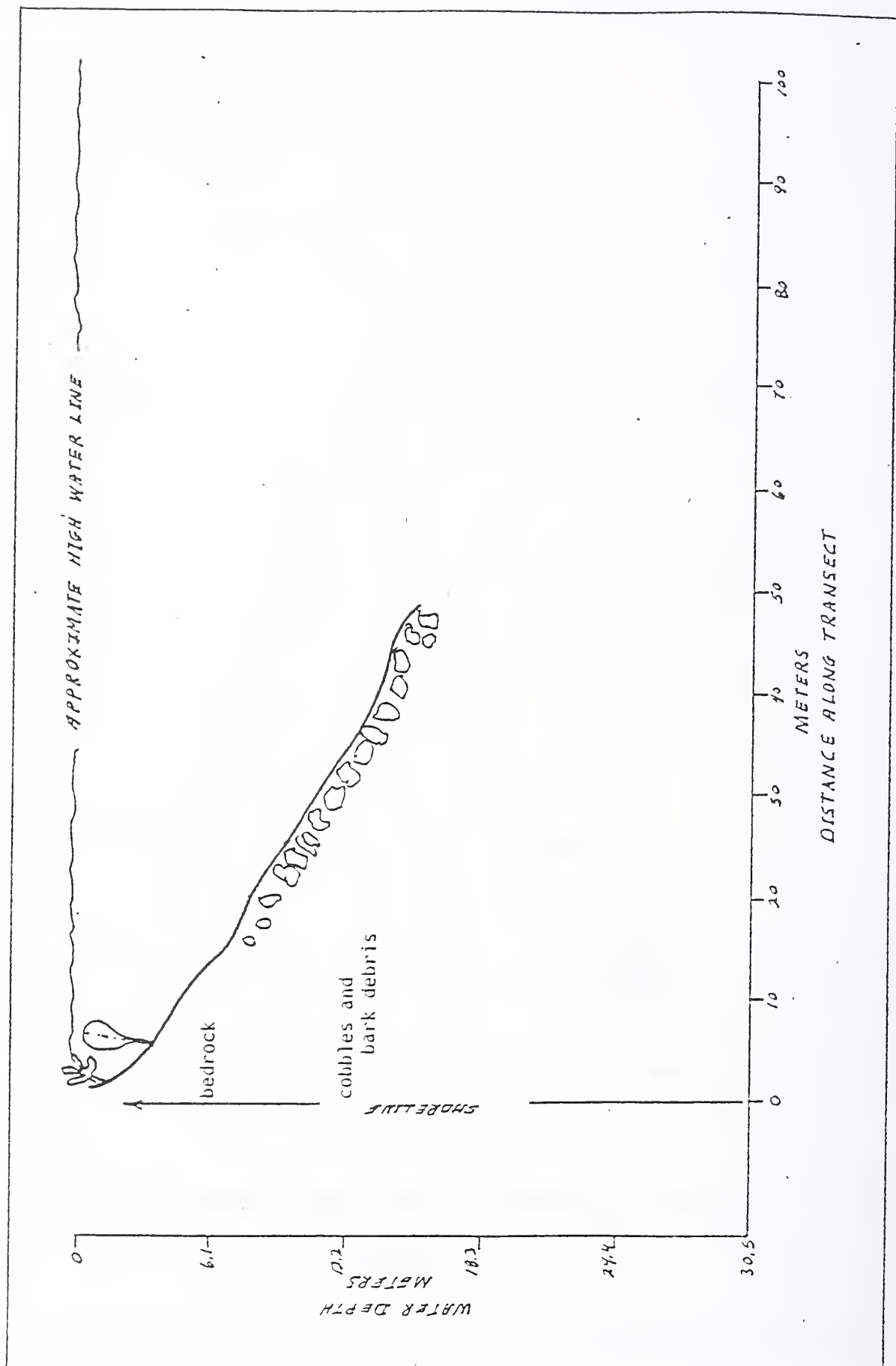


Figure 8. - Bottom profile, Site # 7, Carroll Inlet.

Site #8 - (Figure 9). Start of dive, 1222 hours; end of dive, 1235 hours. The bottom drops moderately from shore along slopes averaging 23 degrees to a distance of 45 meters and beyond. Substratum, from shore to a distance of 45 meters, is mostly bedrock with small areas of sand and shell. Macrophytic algae occur on about 3 percent of the bedrock's surface. Few animal species are present, at least during the time of this investigation.

Shoal Cove - (Figure 10). Start of dive, 1340 hours; end of dive 1400 hours. The bottom drops along an average slope of 13 degrees to a distance of 80 meters from shore, however, the actual contour is step like. Substratum, from shore to a distance of 15 meters, is mostly cobble. Beyond 15 meters, the substratum is composed of fine to course woody debris to 70 meters from shore. A substratum of shell and sand extended beyond 70 meters; maximum water depth was 19.8 meters. Animal species were few with the sea cucumber being most abundant.

Tokeen Bay

Site #6 - (Figure 11). Start of dive, 0930 hours; end of dive, 0945 hours. The bottom slopes moderately from shore along an average slope of 28 degrees. Substratum from shore to a distance of 45 meters is bedrock with pockets of sand and shell. Macrophytic algae occur along the rock surface in dense bands to 30 meters from shore. Animal species composition is diverse and numbers of organisms are abundant in the vegetative zone, but become more sparse at depths deeper than 12 meters, 30 meters from shore.

Site #5 - (Figure 12). Start of dive, 1012 hours; end of dive 1027 hours. The bottom drops moderately along an average slope of 19 degrees to a distance of 55 meters from shore. Substratum from shore to a distance of 20 meters, is mostly bedrock. Beyond 20 meters, the substratum is composed of sand and shell. A moderately dense band of macrophytic algae occurs along the rock and cobble surfaces to 30 meters from shore. Various animal species are present in the vegetative zone but become sparse in water deeper than 15 meters, 40 meters from shore.

Site #1 - (Figure 13). Start of dive, 1025 hours; end of dive 1041 hours. The bottom drops moderately along an average slope of 18 degrees to 45 meters from shore, levels off and drops gently beyond 55 meters. Substratum, from shore to a distance of 30 meters, is mostly bedrock. Beyond 30 meters, the substratum is composed of boulders and cobble grading into sand and shell. A moderately dense band of macrophytic algae occurs along the bedrock and boulder surfaces to 35 meters from shore. Various animal species are present in the vegetative zone but become sparse in water deeper than 11 meters, 40 meters from shore.

Shelikof Island

Site #1 - (Figure 14). Start of dive, 1019 hours; end of dive, 1035 hours. The bottom drops moderately from shore along a slope of 25 degrees to a distance of 20 meters from shore and then drops gently along slopes of 7 to 11 degrees to 65 meters from shore. Substratum, from shore to a distance of 20 meters, is mostly bedrock. Beyond

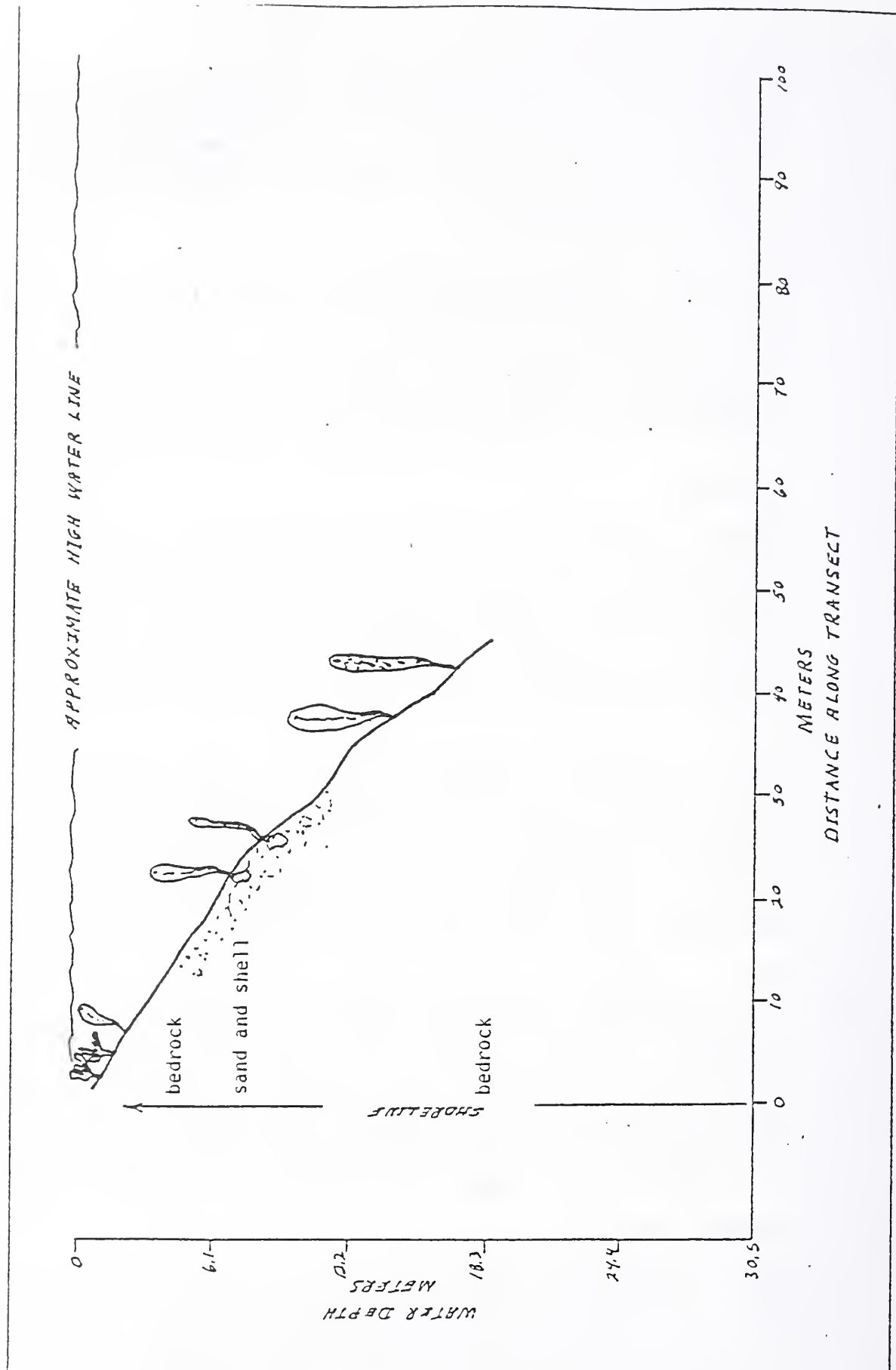


Figure 9. - Bottom profile, Site #8, Carroll Inlet.

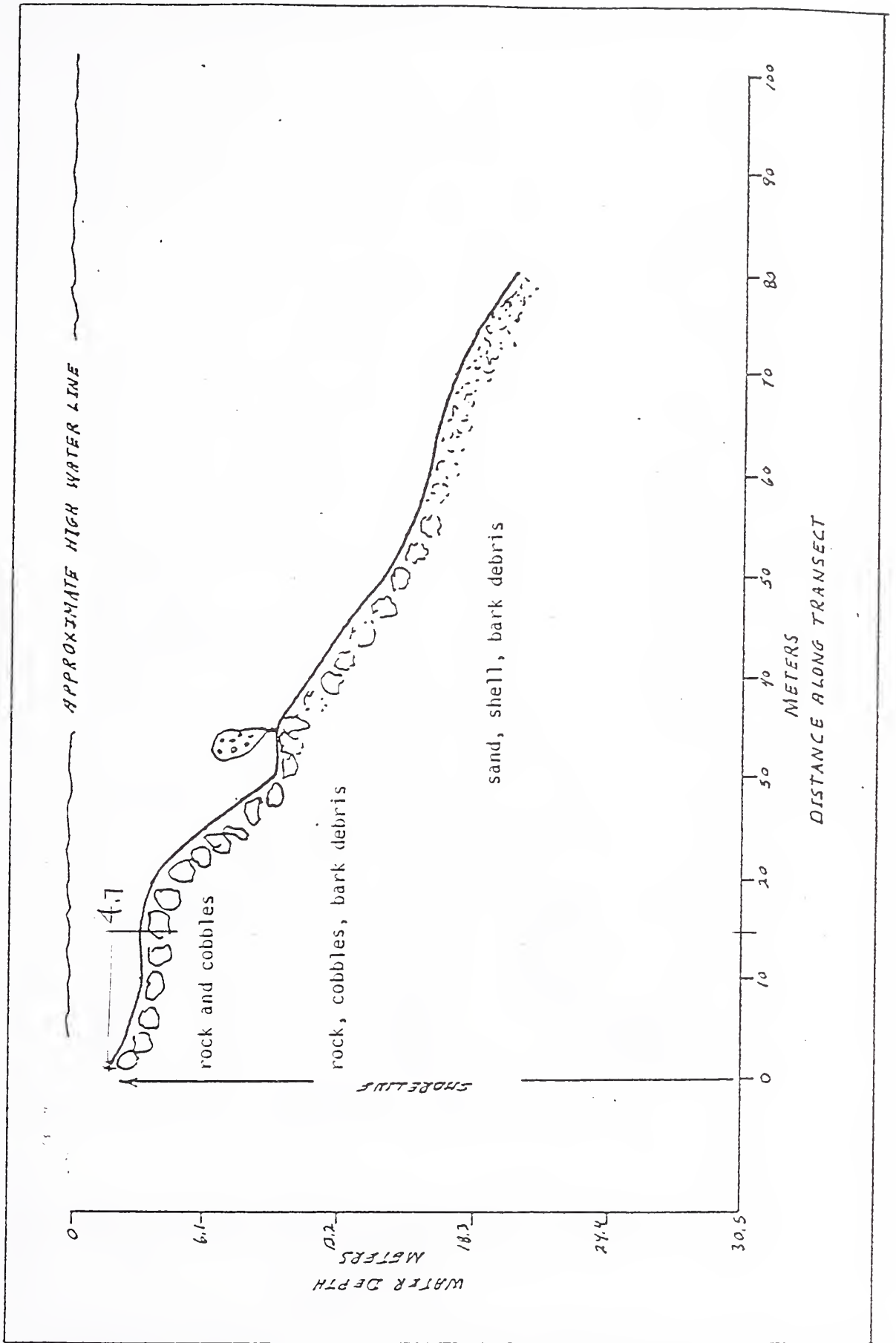


Figure 10. - Bottom profile, Shoal Cove, Carroll Inlet.

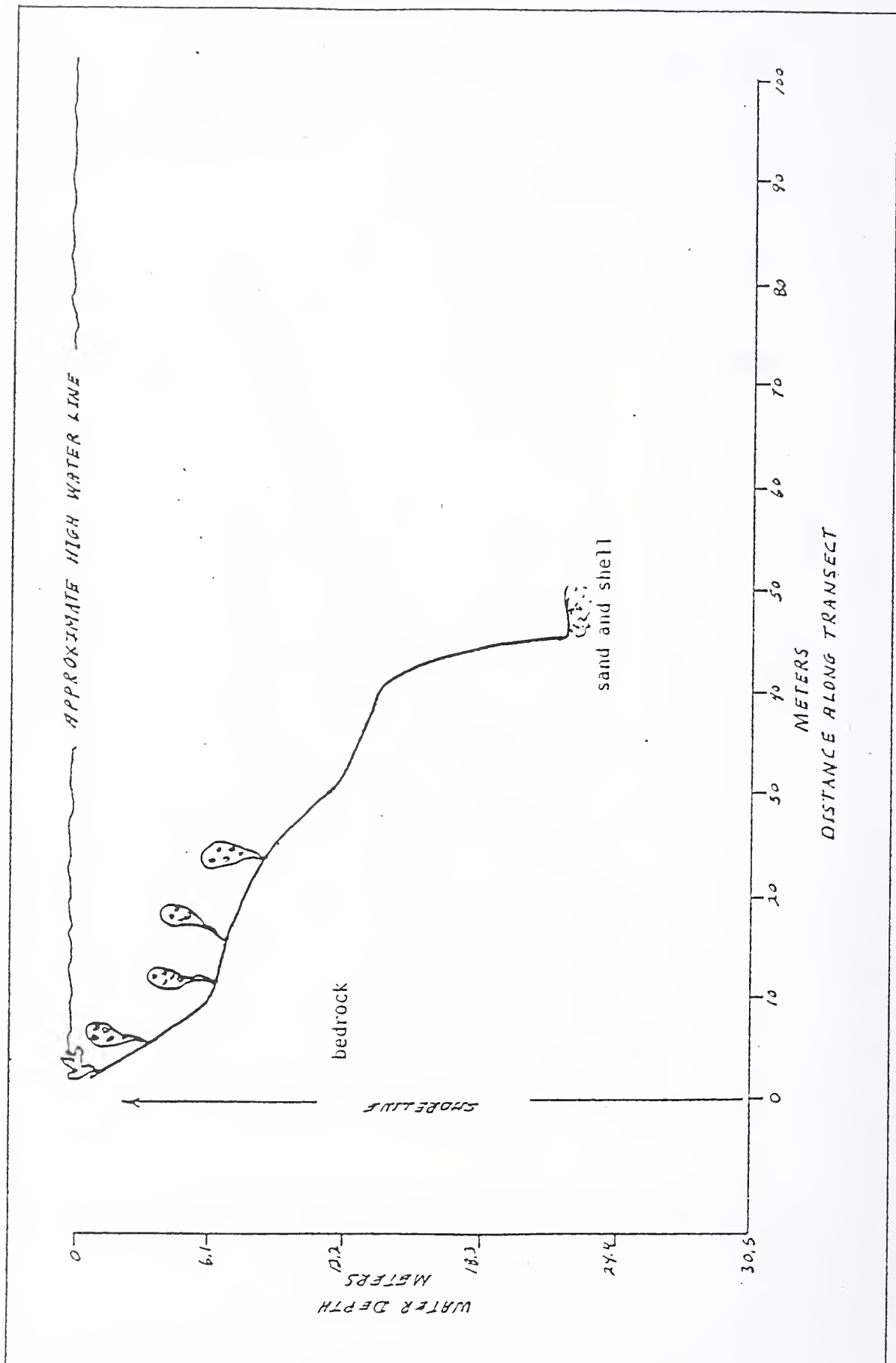


Figure 11. - Bottom profile, Site #6, Tókeen Bay.

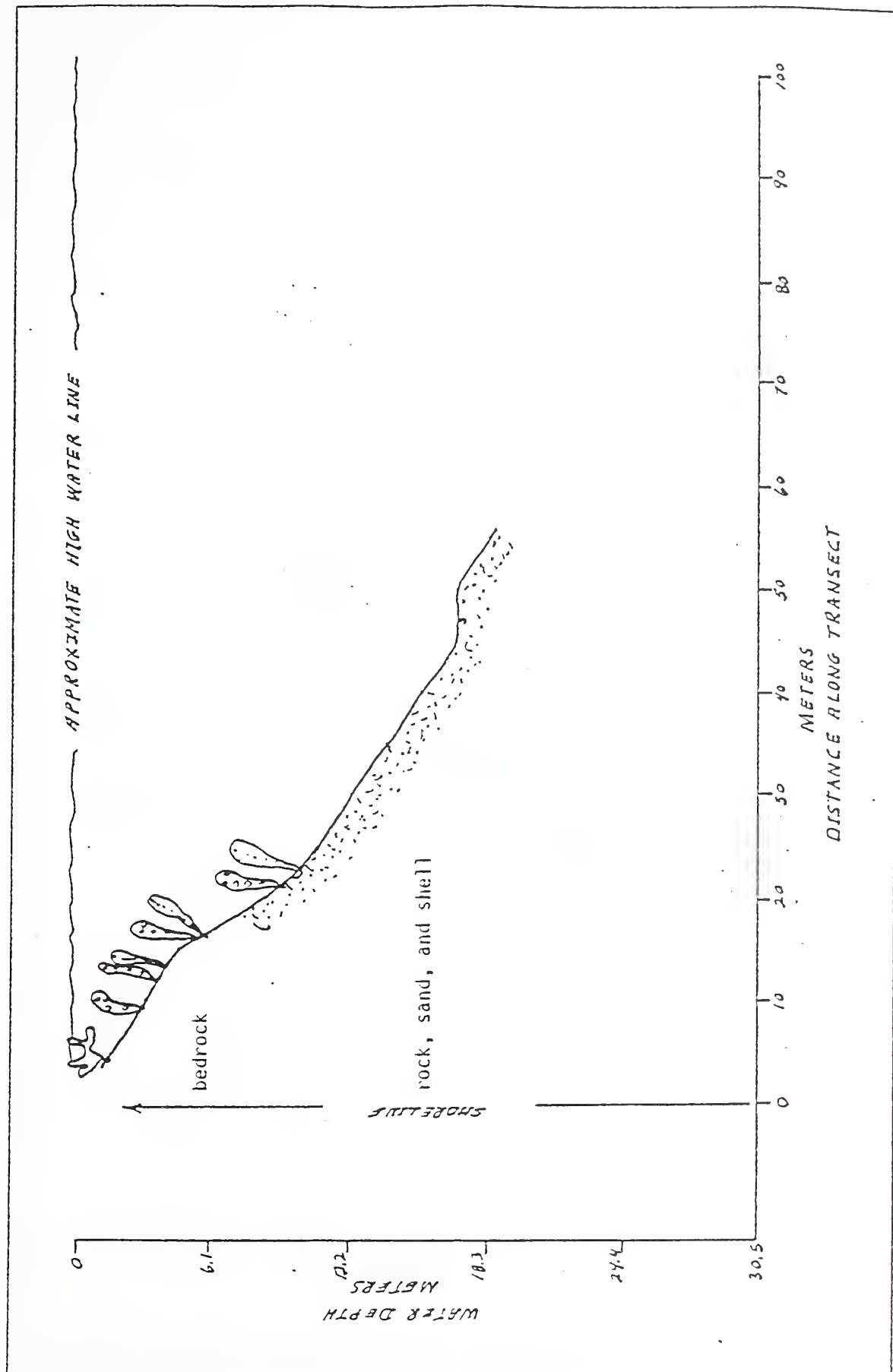


Figure 12. - Bottom profile, Site #5, Token Bay.

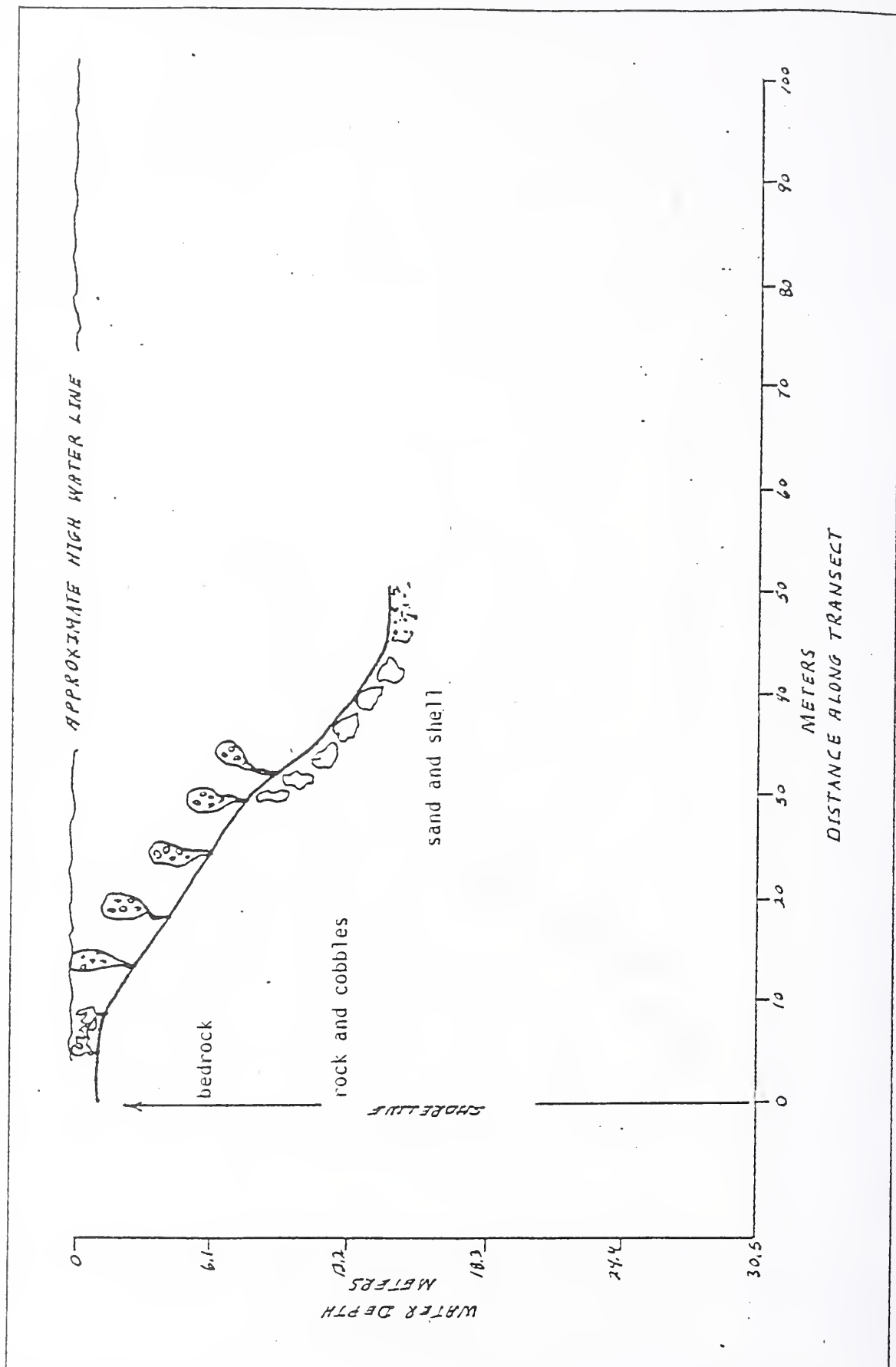


Figure 13. - Bottom profile Site #1, Token Bay.

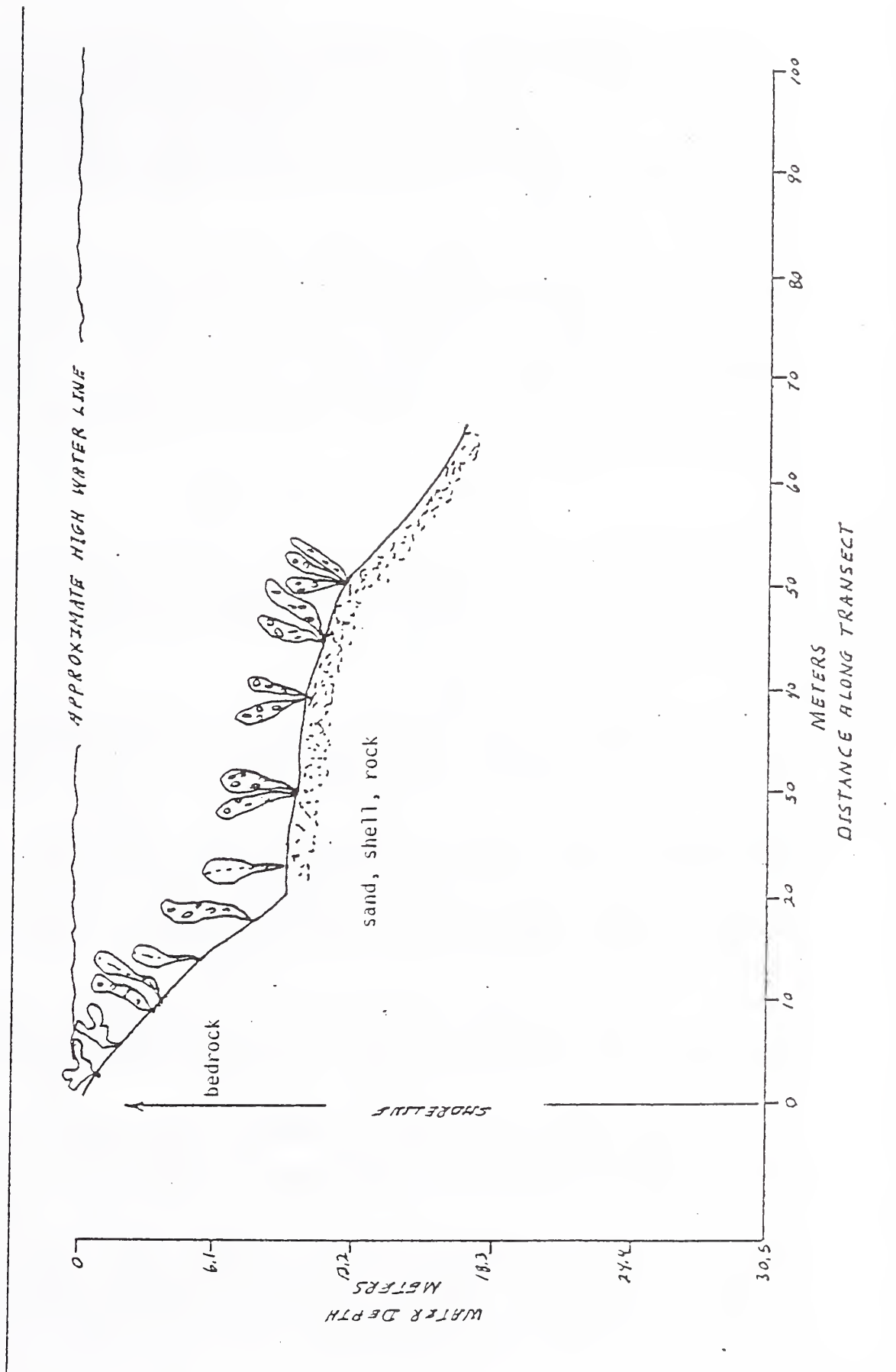


Figure 14. - Bottom profile Site #1 Shelikof Island

20 meters, the substratum is composed of sand and shell with numerous rock out-croppings. Dense bands of macrophytic algae occur along the bedrock and rock out-croppings to a distance of 50 meters from shore; 80 to 90 percent of the area is covered by these algae. Animal species composition is diverse and numbers of organisms are abundant, especially in the vegetative zone, but become sparse at a depth of 13 meters, 50 meters from shore.

Site #3 - (Figure 15). Start of dive, 1110 hours; end of dive 1128 hours. The bottom drops moderately from shore along an average slope of 25 degrees to a distance of 50 meters from shore. Substratum, from shore to a distance of 15 meters, is bedrock. Beyond 15 meters, the substratum is composed of sand and shell with boulders. A moderately dense band of macrophytic algae occurs, from shore, to a distance of 35 meters. Animal species composition is diverse and numbers of organisms are abundant in the vegetative zone. Water depth was 18 meters, 50 meters from shore.

DISCUSSION AND CONCLUSIONS

Thorne Arm - Site #6 - Biological production in the vegetative zone is quite rich with respect to both species diversity and numbers of organisms. However, farther from shore this production decreases markedly. With the extensive vegetative zone and gentle slopes we do not recommend this site be used as a transfer facility.

Site #6A - Biologically, this site is similar to Site #6, however, with its steeper bottom slopes and less vegetated area, productivity would not be affected to the extent as that at Site #6. We would recommend Site #6A be considered for a log transfer facility in Thorne Arm.

Carroll Inlet - Site #4 - Biological production is relatively limited. Bark that accumulates should have minimal impact on the area's ecology. The point just north of the proposed site was sounded with a weight and line. The bottom slope is steeper and deeper water is closer to the shore. This would make the point better suited for the location of a transfer facility. However, either site could be used.

Site #7 - This is the location of an old transfer facility. Biological production is poor. Woody debris covers the substratum and an additional accumulation of bark debris would have minimal impacts on the area. This site could be used as a transfer location.

Site #8 - Biological production is limited to a few plants attached to rock surfaces. Animal species were few. The steeper bottom slopes should facilitate dispersal of woody debris into deeper and less productive waters. This site could be used as a transfer facility.

Shoal Cove - This site has been used as a transfer site. Woody debris covers the bottom for a distance of 75 meters from shore. Biological production is relatively limited. An additional accumulation of bark debris should have only minimal impacts on the local area. This site is suitable for a transfer facility.

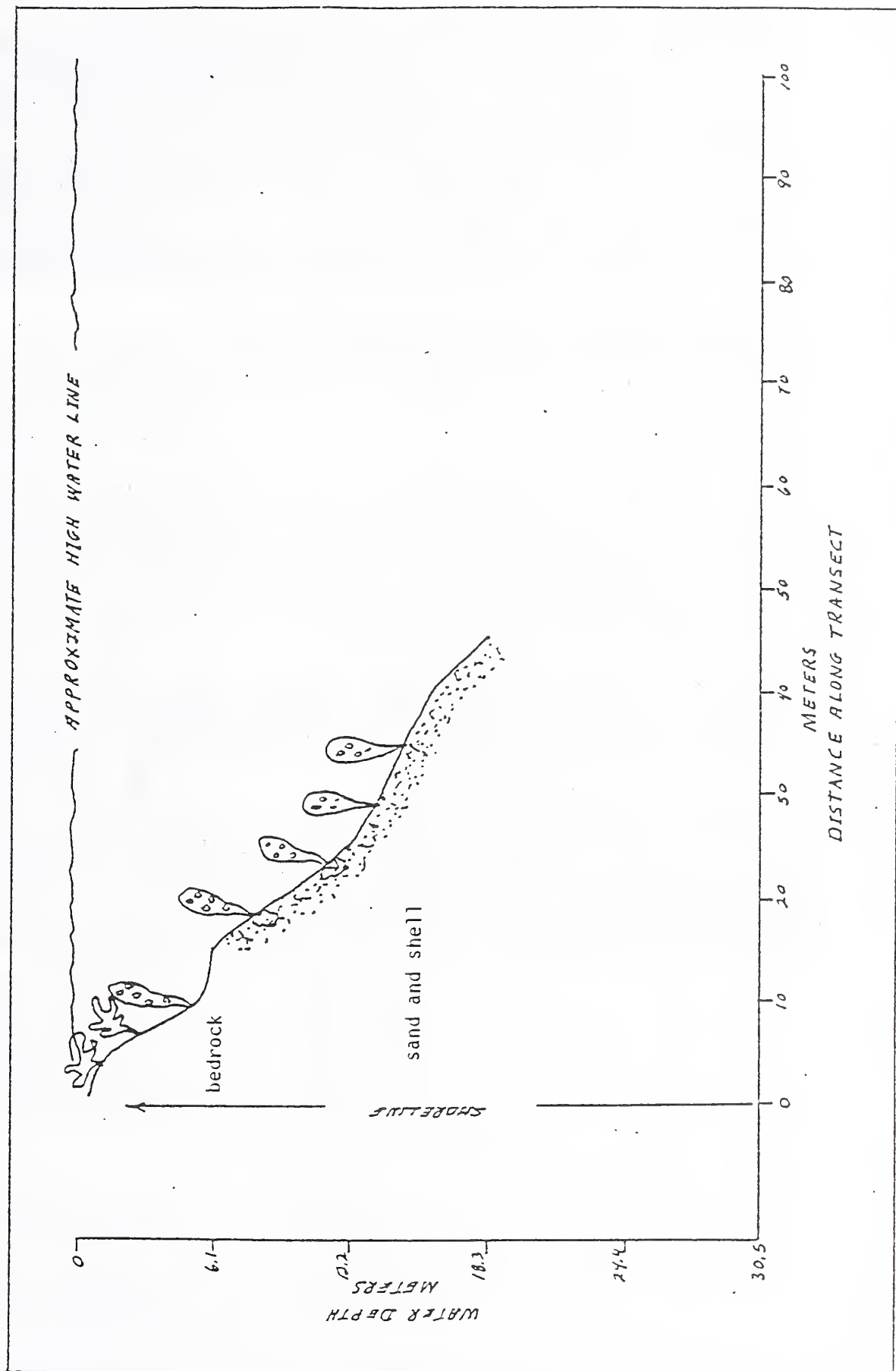


Figure 15. - Bottom profile Site #3, Shelikof Island.

Tokeen Bay - Site #6 - Biological production, near shore, is quite rich with respect to both species diversity and numbers of organisms. This site is also located on an island. Access to the site would require either a bridge or fill. A fill would cause additional impacts to the biological community if this site was developed. Construction of a transfer facility would not be recommended at this site even without the additional impacts associated with providing access to the island.

Site #5 - This site is moderately rich in the production of both plant and animal species. It is not, however, as productive as Site #6. This site is preferred for a log transfer location.

Site #1 - This site is moderately rich in both plant and animal species. Nearshore slope is similar to that of Site #5. This site could be used as a transfer location, however, we would recommend Site #5 over this location.

Shelikof Island

Site #1 - Biological production is very rich with respect to both species diversity and numbers of organisms. Further, the bottom is stepped with large expanses of flat area. Woody debris would be retained in the productive zone and significant adverse impacts would occur to existing productivity if this site was developed. This is not a good location for a transfer facility.

Site #3 - Biological production near shore is quite rich in both species diversity and numbers of organisms. However, farther from shore this production decreases. Steeper bottom slopes should facilitate dispersal of debris into deeper and less productive waters. This location is suitable for a transfer facility.

Proposed sites indicated as suitable for log transfer facilities are based on observations of estuarine ecology made during these investigations. It should be noted, however, that observations over time were not made and as a result, seasonal changes of productivity, including fish and shellfish spawning occurrences, were not observed. Our conclusions could change at a later date pending new information.

Table 1. List of Plant and Animal Species Observed During Field Investigations - July 18-21, 1983.

Thorne Arm - Site #6

- Plant Species -

<u>Agarum cribrosum</u>	Brown algae
<u>Desmarestia intermedia</u>	Brown algae
<u>Fucus distichus</u>	Rock weed
<u>Lithothamnium</u> spp.	Red algae
<u>Rhodymenia palmata</u>	Red algae
<u>Ulva/Monostroma</u> complex	Green algae

- Animal Species -

<u>Balanus</u> spp.	Barnacle
<u>Corella willmeriana</u>	Glass tunicate
<u>Dermasterias imbricata</u>	Leather star
<u>Evasterias troschelii</u>	Molted star
<u>Florometra serratissima</u>	North Pacific crinoid
<u>Henricia leviuscula</u>	Blood star
<u>Hexagrammos decagrammus</u>	Kelp greenling
<u>Limpet</u>	Limpet
<u>Metandrocarpa taylori</u>	Red social tunicate
<u>Membranipora</u> spp.	Kelp bryozoan
<u>Microporiana borealis</u>	Jointed bryozoan
<u>Mytilus edulis</u>	Blue mussel
<u>Pagurus setosus</u>	Setose hermit crab
<u>Parastichopus californicus</u>	Mop sea cucumber
<u>Ptilosarcus gurneyi</u>	Sea pen
<u>Pycnopodia helianthoides</u>	Sunflower star
<u>Rhacochilus vacca</u>	Pile perch
<u>Serpula vermicularia</u>	Common serpulid
<u>Snail</u>	Snail
<u>Telmessus cheiragonus</u>	Horse crab

Carroll Inlet - Plant Species -

		Site Number			
		4	7	8	Shoal Cove

<u>Agarum cribrosum</u>	Brown algae			x	x
<u>Constantinea simplex</u>	Red algae	x		x	
<u>Fucus distichus</u>	Rock weed	x	x	x	
<u>Laminaria</u> spp.	Brown algae	x	x	x	
<u>Rhodymenia palmata</u>	Red algae			x	
<u>Zostera marina</u>	Eelgrass	x		x	

- Animal Species -

<u>Balanus</u> spp.	Barnacle	x	x	x	x
<u>Boltenia villosa</u>	Stalked hairy tunicate	x	x	x	
<u>Cancer magister</u>	Dungeness crab	x	x	x	
<u>Cancer productus</u>	Red rock crab	x			

Carroll Inlet (cont'd)	- Plant Species -	4	Site Number			Shoal Cove
			7	8		
<u>Corella willmeriana</u>	Glass tunicate					x
<u>Crossaster papposus</u>	Rose sun star					x
<u>Dermasterias imbricata</u>	Leather star	x				
<u>Elassochirus tenuimanus</u>	Hermit crab					x
<u>Evasterias troschelii</u>	Molted star	x	x			
<u>Leptasterias hexactis</u>	Six-armed star					x
<u>Limpet</u>	Limpet	x	x	x		
<u>Mytilus edulis</u>	Blue mussel	x	x	x		
<u>Ophiopholus aculeata</u>	Brittle star					x
<u>Oregonia gracilis</u>	Decorator crab	x				
<u>Pagurus spp.</u>	Hermit crab	x	x	x		
<u>Parastichopus californicus</u>	Mop sea cucumber	x		x		x
<u>Pisaster brevispinus</u>	Sea star	x				
<u>Pisaster ochraceus</u>	Ochre star			x		
<u>Pycnopodia helianthoides</u>	Sunflower star	x	x	x		x
<u>Rhacochilus vacca</u>	Pile perch	x	x	x		
<u>Snail</u>	Snail	x	x	x		
<u>Strongylocentrolus droebachiensis</u>	Green sea urchin					x
<u>Tresus capax</u>	Horse clam	x				

Tokeen Bay	- Plant Species -	Site		
		1	5	6
<u>Agarum cribrosum</u>	Brown algae	x	x	x
<u>Constantinea simplex</u>	Red algae		x	x
<u>Desmarestia intermedia</u>	Brown algae			x
<u>Fucus distichus</u>	Rock weed	x	x	x
<u>Laminaria spp.</u>	Brown algae	x	x	x
<u>Lithothamnium spp.</u>	Red algae	x	x	x
<u>Rhodomela spp.</u>	Red algae		x	x
<u>Ulva/Monostroma complex</u>	Green algae		x	x

- Animal Species -

<u>Balanus spp.</u>	Barnacle	x	x	x
<u>Calliostoma annulatum</u>	Ringed top shell			x
<u>Chlamys spp.</u>	Pink scallop			x
<u>Cucumaria miniata</u>	Orange sea cucumber			x
<u>Dermasterias imbricata</u>	Leather star	x	x	x
<u>Halocynthia aurantium</u>	Sea peach			x
<u>Halocynthia igaboja</u>	Hairy tunicate			x
<u>Limpet</u>	Limpet	x	x	x
<u>Membranipora spp.</u>	Kelp bryozoan	x	x	x
<u>Microporina borealis</u>	Jointed bryozoan	x	x	x
<u>Parastichopus californicus</u>	Mop sea cucumber	x	x	x
<u>Pycnopodia helianthoides</u>	Sunflower star	x	x	x

<u>Tokeen Bay (cont'd)</u>	- Animal Species -	Site		
		1	5	6
Rockfish	Rockfish			x
<u>Schizobranchia insignis</u>	Feather-duster worm			x
<u>Serpula vermicularia</u>	Common serpulid	x	x	x
Snail	Snail	x	x	x
<u>Strongylocentrolus droebachiensis</u>	Green sea urchin	x		
<u>Terebratalia transversa</u>	Common lamp shell			x
<u>Tonicella lineata</u>	Lined red chiton		x	

<u>Shelikof Island</u>	- Plant Species -	Site	
		1	3
<u>Agarum cribrosum</u>	Brown algae	x	x
<u>Desmarestia intermedia</u>	Brown algae	x	x
<u>Fucus distichus</u>	Rock weed	x	x
<u>Halosaccion grandiforme</u>	Red algae	x	
<u>Laminaria spp.</u>	Brown algae	x	
<u>Lithothamnium spp.</u>	Red algae	x	x
<u>Rhodomela spp.</u>	Red algae	x	x

- Animal Species -			
<u>Archidoris ohdenieri</u>	White doris	x	x
<u>Balanus spp.</u>	Barnacle	x	x
<u>Corella willmeriana</u>	Glass tunicate		x
<u>Cryptochiton stelleri</u>	Gum boot chiton	x	
<u>Cucumaria miniata</u>	Orange sea cucumber	x	x
<u>Dendronotus dalli</u>	Dall's frond eolis	x	
<u>Evasterias troschelii</u>	Molted star		x
<u>Halocynthia igaboja</u>	Hairy tunicate	x	x
<u>Mediaster aequalis</u>	Vermillion star	x	x
<u>Eupentacta quinquesemita</u>	White sea cucumber		x
<u>Metandrocarpa taylori</u>	Red social tunicate		x
<u>Membranipora spp.</u>	Kelp bryozoan	x	x
<u>Metridium senile</u>	Fine-tentacled sea anemone	x	
<u>Mytilus edulis</u>	Blue mussel	x	
<u>Pachycerianthus fimbriatus</u>	Tube anemone	x	x
<u>Pagurus spp.</u>	Hermit crab	x	
<u>Parastichopus californicus</u>	Mop sea cucumber	x	x
<u>Pisaster brevispinus</u>	Sea star		x
<u>Pisaster ochraceus</u>	Ochre star	x	x
<u>Pycnopodia helianthoides</u>	Sunflower star	x	x
<u>Serpula vermicularia</u>	Common serpulid	x	x
Snail	Snail	x	x
<u>Strongylocentrotus franciscanus</u>	Red sea urchin	x	

Appendix H

Silviculture Diagnosis

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SILVICULTURE DIAGNOSIS - ALTERNATIVE #2																											
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TH	G#	D	VD	C4	C5	C6	C7	TOTAL		VOLUME	MMBF	ASPECT	V00	E	MIN	MAX	NO	IR	WH	T							
VCU	TH							ACRES																			
744	22	1	4	TM	0.5	11.2	0.0	0.0	0.0	11.7	390.7	SOUTH	MM	3	7	11	E	74D	WHM	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744	22	2	4	TM	0.5	9.4	0.0	0.0	0.0	10.0	329.6	SOUTH	MM	4	7	11	E	74D	WHM	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744	22	3	4	TM	0.5	5.2	0.0	0.0	0.0	5.7	183.1	SOUTH	MM	4	7	11	E	74D	WHM	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744	22	4	4	TM	0.4	2.4	0.0	0.0	0.0	2.9	88.4	SOUTH	MM	2	7	8	E	74D	WHM	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
744	22	5	4	TM	0.1	4.1	0.0	0.0	0.0	4.3	143.9	SOUTH	MM	2	7	8	E	74D	WHM	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
22										34.6	1,135.7																
744	24	1	4	ML	0.0	0.0	14.2	0.0	0.0	14.2	642.2	WEST	MO	5	12	17	E	1E	WDC	3	1	100	FNW	N	SL	CC	RS, PLANT(YC), SS, R&W, CC
744	24	2	4	ML	0.0	0.0	15.8	0.0	0.0	15.8	712.9	SOUTH	MO	7	11	17	E	1E	WDC	3	1	100	FNW	N	SL	CC	RS, PLANT(YC), SS, R&W, CC
24										30.0	1,355.1																
744	28	1	4	ML	0.0	0.0	15.6	0.0	0.0	15.6	705.1	NORTH	PR	5	4	10	E	1D	WDC	2	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744	28	2	4	ML	0.0	0.0	6.6	0.0	0.0	6.6	297.5	WEST	MO	5	6	10	E	1E	WDC	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
28										22.2	1,002.7																
744	29	1	4	ML	0.0	3.8	2.1	0.0	0.0	5.9	226.0	WEST	PR	5	7	10	E	1D	WDC	2	1	100	FNW	N	RS	CC	RS, TMPCT, CT, CT, CT, SW
29										5.9	226.0																
744	30	1	4	ML	0.0	14.9	6.4	0.0	0.0	21.3	803.3	WEST	MO	5	8	15	E	1D	WDC	2	1	100	FNW	N	RS	CC	RS, TMPCT, CC
30										21.3	803.3																
744	35	1	4	ML	0.0	11.0	0.0	0.0	0.0	11.0	379.0	WEST	PR	4	6	11	VH	1D	WDC	2	1	100	FNW	N	RS	CC	RS, TMPCT, CT, CT, CT, SW
744	35	2	4	ML	0.0	7.4	0.0	0.0	0.0	7.4	255.9	NORTH	PR	4	6	11	VH	1D	WDC	2	1	100	FNW	N	RS	CC	RS, TMPCT, CT, CT, CT, SW
744	35	3	4	ML	1.7	5.1	0.0	0.0	0.0	6.8	191.5	WEST	MO	6	9	13	VH	1D	WDC	2	1	100	FNW	N	HE	SW	FH, RS, R&W, 2-SW
35										25.2	826.4																
744	37	1	4	ML	6.1	20.7	0.0	0.0	0.0	26.8	767.7	WEST	MO	6	9	20	H	550D	CCD	3	1	70	FW	N	RS	CC	RS, PLANT(YC), SS, CC
37										26.8	767.7																
744	41	1	4	ML	0.0	0.0	3.5	0.0	0.0	3.5	159.0	SOUTH	MO	5	7	10	VH	1E	WDC	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744	41	2	4	ML	0.0	0.0	7.5	0.0	0.0	7.5	337.6	SOUTH	PR	5	5	9	VH	1E	WDC	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
744	41	3	4	ML	0.0	0.0	1.9	0.0	0.0	1.9	84.6	SOUTH	PR	4	5	7	VH	1E	WDC	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
41										12.9	581.1																

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VCU			T#		G#		D		U		L		C4		C5		C6		C7		TOTAL ACRES		VOLUME		ASPECT		V00		E		P		MIN		MAX		NO		IR		T		S		L		O		R		I		M		HM		PH		LE		AE		PROPOSED		FUTURE MANAGEMENT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

SILVICULTURE DIAGNOSIS - ALTERNATIVE #2

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737	110	1	4	TM	0.0	5.7	0.0	0.0	5.7	196.8	SOUTH	MM	3	6	8	M	24E	CMC	1	1	60	SE	N	RS	CC	RS, PLANT(YC), SS, CT, CT, SW																												
737	110	2	4	ML	0.0	3.2	0.0	0.0	3.2	110.8	SOUTH	PR	4	6	8	H	74E	WHM	2	1	100	FNW	N	RS	CC	RS, WLPCT, CT, CT, SW																												
737	110	3	4	TM	0.6	4.4	0.0	0.0	5.1	159.6	SOUTH	MM	0	6	8	M	24E	CMC	1	1	60	SE	N	RS	CC	RS, PLANT(YC), SS, CT, CT, SW																												
110					0.6	13.4	0.0	0.0	14.0	467.2																																												
746	111	1	4	TM	8.6	0.0	0.0	0.0	8.7	202.6	EAST	MM	3	3	5	M	25	CMH	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC																												
746	111	2	4	TM	5.3	0.0	0.0	0.0	5.3	142.8	EAST	MM	3	3	5	M	25	CMH	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC																												
111					13.9	0.0	0.0	0.0	14.0	345.4																																												
746	112	1	4	ML	1.6	8.2	0.0	0.0	9.8	296.6	EAST	MM	2	3	4	H	1D	WDC	2	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, TMPCT, CT, SW																												
112					1.6	8.2	0.0	0.0	9.8	296.6																																												
746	113	1	4	ML	2.7	0.0	0.0	0.0	2.8	52.6	WEST	MM	3	4	5	M	25	CMH	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC																												
746	113	2	4	ML	1.3	3.2	0.0	0.0	4.5	123.1	SOUTH	MM	2	3	4	M	25	CMH	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC																												
113					4.0	3.3	0.0	0.0	7.4	175.7																																												
746	116	1	4	ML	1.9	2.0	0.0	0.0	4.0	124.6	SOUTH	MM	3	4	6	H	528D	WHS	2	4	75	FNW	N	RS	CC	RS, CC																												
746	116	2	4	ML	5.7	0.2	0.0	0.0	6.0	163.2	SOUTH	MM	3	4	5	M	25	CMH	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC																												
116					7.7	2.2	0.0	0.0	10.0	287.8																																												
746	117	1	4	ML	0.0	3.6	0.0	0.0	3.6	124.7	EAST	PR	4	4	6	H	528D	WHS	2	4	75	FNW	N	RS	CC	RS, CC																												
117					0.0	3.6	0.0	0.0	3.6	124.7																																												
746	119	1	4	ML	6.3	0.1	0.0	0.0	6.4	176.0	EAST	MM	2	3	5	M	24D	CMC	1	1	60	SE	N	RS	CC	RS, PLANT(YC), SS, CC																												
119					6.3	0.1	0.0	0.0	6.4	176.0																																												
746	120	1	4	ML	11.7	8.4	0.0	0.0	20.1	612.2	EAST	MM	3	4	8	H	1D	WDC	2	1	100	FNW	N	RS	CC	RS, TMPCT, CT, CT, CC																												
120					11.7	8.4	0.0	0.0	20.1	612.2																																												
746	121	1	4	SV	0.7	4.3	0.0	0.0	5.0	154.6	WEST	PR	1	8	9	H	2D	WDC	2	1	100	FNW	N	RS	CC	RS, TMPCT, CT, CT, CT, SW																												
121					0.7	4.3	0.0	0.0	5.0	154.6																																												

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746	122	1	4	SV	0.3	5.6	0.0	0.0	6.0	198.1	EAST	PR	1	8	10	H	2D	WDC	2	1	100	FNW	N	HE	SW	FH,RS,R&W,2-SW	
	122				0.3	5.6	0.0	0.0	6.0	198.1																	
746	123	1	4	ML	12.2	3.5	0.0	0.0	15.7	343.1	EAST	PR	7	5	12	H	24E	CMC	1	1	60	SE	N	HE	SW	FH,RS,R&W,2-SW	
	123				12.2	3.5	0.0	0.0	15.7	343.1																	
746	124	1	4	ML	2.1	4.3	0.0	0.0	6.4	166.5	EAST	PR	6	6	11	H	24E	CMC	1	1	60	SE	N	HE	SW	FH,RS,R&W,2-SW	
746	124	2	4	ML	13.3	0.8	0.0	0.0	14.1	361.0	EAST	PR	6	6	13	H	24E	CMC	1	1	60	SE	N	HE	SW	FH,RS,R&W,2-SW	
	124				15.4	5.1	0.0	0.0	20.5	527.5																	
746	125	1	4	TM	3.4	0.0	0.0	0.0	3.5	72.8	EAST	MM	1	3	3	M	25	CMH	1	1	30	SEC	N	RS	CC	RS,PLANT(YC),SS,CC	
	125				3.4	0.0	0.0	0.0	3.5	72.8																	
746	126	1	4	ML	5.1	0.2	0.0	0.0	5.4	128.7	EAST	MM	1	2	2	M	25	CMH	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC	
746	126	2	4	ML	2.7	1.1	0.0	0.0	3.8	108.5	EAST	MM	1	2	2	M	25	CMH	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC	
746	126	3	4	ML	1.6	0.5	0.0	0.0	2.1	41.3	EAST	MM	1	2	2	M	25	CMH	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC	
	126				9.5	1.8	0.0	0.0	11.4	278.5																	
746	127	1	4	TM	8.8	0.0	0.0	0.0	8.8	204.9	NORTH	MM	1	2	4	M	25	CMH	1	1	30	SEC	N	SH	CC	RS,CC	
	127				8.8	0.0	0.0	0.0	8.8	204.9																	
744	129	1	4	TM	6.4	0.0	0.0	0.0	6.5	57.1	NONE	MM	2	8	9	L	25	CMH	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC	
744	129	2	4	TM	6.5	0.0	0.0	0.0	6.5	57.4	WEST	MM	2	9	10	L	23	CMH	1	1	20	SEC	N	SH	CC	RS,PLANT(YC),SS,CC	
744	129	3	4	TM	4.1	0.0	0.0	0.0	4.1	36.3	SOUTH	MM	2	8	9	L	25	CMH	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC	
744	129	4	4	TM	26.1	0.0	0.0	0.0	26.2	230.5	SOUTH	MM	2	7	9	L	25	CMH	1	1	30	SEC	N	RS	CC	RS,PLANT(YC),SS,CC	
744	129	5	4	TM	11.4	0.0	0.0	0.0	11.5	101.0	SOUTH	MM	2	6	8	L	25	CMH	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC	
	129				54.8	0.0	0.0	0.0	54.8	482.4																	
744	130	1	4	TM	14.2	0.0	5.9	0.0	20.1	657.6	WEST	MM	5	9	14	VH	528F	WHS	3	4	75	FNW	N	RS	CC	RS,PLANT(YC),SS,CC	
744	130	2	4	TM	15.1	0.0	4.4	0.0	19.5	597.8	NORTH	MM	4	9	11	VH	528F	WHS	3	4	75	FNW	N	RS	CC	RS,PLANT(YC),SS,CC	
	130				29.3	0.0	10.3	0.0	39.6	1,255.4																	

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VCU	T#	G#	D	VD	C4	C5	C6	C7	TOTAL	ACRES	VOLUME	MMBF	ASPECT	V00	E	P	MIN	MAX	NO	IR	T	S	L	O	M	C	I	G	M	C	I	D	TE	WET	AA	OT	RT	PH	LE	AE	HM	M	R	I	SN	I	R	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H	M	H

RN	T	I	T	V	V	V	V	S	T	M	I	R	
VI	EI	I	L RL	O	O	O	O	L	IR		SN	I	M HM
ST	N UEU	G# D VD	C4	C5	C6	C7	TOTAL ACRES	VOLUME MMBF ASPECT VOO E	MIN MAX NO	P	M C TE EX	PH LE AE	PROPOSED
VCU T#													FUTURE MANAGEMENT
744 22	1 4 TM	0.5	11.2	0.0	0.0	0.0	11.7	390.7 SOUTH MM 3	7 11 E	74D WHM 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744 22	2 4 TM	0.5	9.4	0.0	0.0	0.0	10.0	329.6 SOUTH MM 4	7 11 E	74D WHM 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744 22	3 4 TM	0.5	5.2	0.0	0.0	0.0	5.7	183.1 SOUTH MM 4	7 11 E	74D WHM 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744 22	4 4 TM	0.4	2.4	0.0	0.0	0.0	2.9	88.4 SOUTH MM 2	7 8 E	74D WHM 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
744 22	5 4 TM	0.1	4.1	0.0	0.0	0.0	4.3	143.9 SOUTH MM 2	7 8 E	74D WHM 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
22		2.2	32.3	0.0	0.0	0.0	34.6	1,135.7					
744 27	1 4 ML	0.0	0.0	17.3	0.0	0.0	17.3	781.9 NORTH MO 5	7 12 VH	1E WDC 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744 27	2 4 ML	0.2	0.0	3.2	0.0	0.0	3.5	145.9 WEST MO 5	11 14 VH	1E WDC 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, SW
744 27	3 4 ML	0.1	0.0	3.9	0.0	0.0	4.1	175.9 NORTH MO 5	10 13 VH	1D WDC 2	1 100 FNW	N RS CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744 27	4 4 ML	0.1	0.0	5.1	0.0	0.0	5.2	231.2 WEST MO 5	13 18 VH	2E WDC 2	1 100 FNW	N RS CC	RS, PLANT(YC), SS, CC
744 27	5 4 ML	0.1	0.2	2.4	0.0	0.0	2.7	114.7 NORTH MO 5	12 15 VH	2E WDC 2	1 100 FNW	N RS CC	RS, PLANT(YC), SS, CC
27		0.6	0.2	31.9	0.0	0.0	32.7	1,449.7					
744 28	1 4 ML	0.0	0.0	15.6	0.0	0.0	15.6	705.1 NORTH PR 5	4 10 E	1D WDC 2	1 100 FNW	N RS CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744 28	2 4 ML	0.0	0.0	6.6	0.0	0.0	6.6	297.5 WEST MO 5	6 10 E	1E WDC 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
28		0.0	0.0	22.2	0.0	0.0	22.2	1,002.7					
744 35	1 4 ML	0.0	11.0	0.0	0.0	0.0	11.0	379.0 WEST PR 4	6 11 VH	1D WDC 2	1 100 FNW	N RS CC	RS, TMPCT, CT, CT, CT, SW
744 35	2 4 ML	0.0	7.4	0.0	0.0	0.0	7.4	255.9 NORTH PR 4	6 11 VH	1D WDC 2	1 100 FNW	N RS CC	RS, TMPCT, CT, CT, CT, SW
744 35	3 4 ML	1.7	5.1	0.0	0.0	0.0	6.8	191.5 WEST MO 6	9 13 VH	1D WDC 2	1 100 FNW	N HE SW	FH, RS, R&W, 2-SW
35		1.7	23.5	0.0	0.0	0.0	25.2	826.4					
744 38	1 4 ML	0.0	7.8	0.0	0.0	0.0	7.8	267.9 WEST PR 4	8 11 E	1D WDC 2	1 100 FNW	N RS CC	RS, TMPCT, CT, CT, CT, SW
744 38	1 4 ML	0.0	2.5	0.0	0.0	0.0	2.5	85.6 WEST PR 4	9 12 E	1D WDC 2	1 100 FNW	N HE SW	FH, RS, R&W, 2-SW
38		0.0	10.2	0.0	0.0	0.0	10.2	353.5					
744 41	1 4 ML	0.0	0.0	3.5	0.0	0.0	3.5	159.0 SOUTH MO 5	7 10 VH	1E WDC 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, TMPCT, CT, SW
744 41	2 4 ML	0.0	0.0	7.5	0.0	0.0	7.5	337.6 SOUTH PR 5	5 9 VH	1E WDC 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
744 41	3 4 ML	0.0	0.0	1.9	0.0	0.0	1.9	84.6 SOUTH PR 4	5 7 VH	1E WDC 3	1 100 FNW	N RS CC	RS, PLANT(YC), SS, WLPCT, CT, CT, SW
41		0.0	0.0	12.9	0.0	0.0	12.9	581.1					

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H AU RN VI EI ST VCU	S E T T I N G#	D V L U E D	C4	C5	C6	C7	TOTAL ACRES	VOLUME	MMBF ASPECT	VQO	P E	S L O P E	T WH IR MAX NO ELEV DW	SMU	ECO CODE	M I G	M C	M C	I D	SN	I R	R I M PH LE AE	RT RH GH VH	PROPOSED FUTURE MANAGEMENT
746 113	1	4 ML	2.7	0.0	0.0	0.0	2.8	52.6 WEST	MM	3	4	5	M	25	CMM	1	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC
746 113	2	4 ML	1.3	3.2	0.0	0.0	4.5	123.1 SOUTH	MM	2	3	4	M	25	CMM	1	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC
113			4.0	3.3	0.0	0.0	7.4	175.7																
746 116	1	4 ML	1.9	2.0	0.0	0.0	4.0	124.6 SOUTH	MM	3	4	6	H	528D	WHS	2	4	75	FNW	N	RS	CC	RS, CC	
746 116	2	4 ML	5.7	0.2	0.0	0.0	6.0	163.2 SOUTH	MM	3	4	5	M	25	CMM	1	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC
116			7.7	2.2	0.0	0.0	10.0	287.8																
746 117	1	4 ML	0.0	3.6	0.0	0.0	3.6	124.7 EAST	PR	4	4	6	H	528D	WHS	2	4	75	FNW	N	RS	CC	RS, CC	
117			0.0	3.6	0.0	0.0	3.6	124.7																
746 119	1	4 ML	6.3	0.1	0.0	0.0	6.4	176.0 EAST	MM	2	3	5	M	24D	CMC	1	1	60	SE	N	RS	CC	RS, PLANT(YC), SS, CC	
119			6.3	0.1	0.0	0.0	6.4	176.0																
746 120	1	4 ML	11.7	8.4	0.0	0.0	20.1	612.2 EAST	MM	3	4	8	H	1D	WDC	2	1	100	FNW	N	RS	CC	RS, TMPCT, CT, CT, CC	
120			11.7	8.4	0.0	0.0	20.1	612.2																
746 121	1	4 SV	0.7	4.3	0.0	0.0	5.0	154.6 WEST	PR	1	8	9	H	2D	WDC	2	1	100	FNW	N	RS	CC	RS, TMPCT, CT, CT, CT, SW	
121			0.7	4.3	0.0	0.0	5.0	154.6																
746 122	1	4 SV	0.3	5.6	0.0	0.0	6.0	198.1 EAST	PR	1	8	10	H	2D	WDC	2	1	100	FNW	N	HE	SW	FH, RS, R&W, 2-SW	
122			0.3	5.6	0.0	0.0	6.0	198.1																
746 125	1	4 TM	3.4	0.0	0.0	0.0	3.5	72.8 EAST	MM	1	3	3	M	25	CMM	1	1	30	SEC	N	RS	CC	RS, PLANT(YC), SS, CC	
125			3.4	0.0	0.0	0.0	3.5	72.8																

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AU	E	RN	T	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

SILVICULTURE DIAGNOSIS - ALTERNATIVE #4

SILVICULTURE DIAGNOSIS - ALTERNATIVE #4																									PAGE 9 OF 09										
H	S											S																							
AU	E	RN	T	V			V	V			L	O			P	O			I			R													
VI	T	V			V	O	O	O			L	O			L	O			SN	ID	TE	WET	PH	LE	HM										
EI	I	L	RL	O	O	O	O	O			L	O			L	O			M	M	C	AE	OT	RT	AE										
ST	N	U	EU	L	L	L	L	L			L	L			L	L			M	C	G	VB	GH	VH	VB										
T#	G#	D	VD	C4	C5	C6	C7	C7			C7			C7			C7			EX	HAB	RB	GH	VH	VB										
VCU	T#	TOTAL										VOLUME										ELEV		SMU		CODE		ECO		PROPOSED		FUTURE MANAGEMENT			
		ACRES										MMBF										ELEV		DW		WHM		CCS		CCS		CCS		CCS	
744	131	1	4	TM	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	14	H	33E	CCS	3	4	70	FIW	N	RS	CC	RS, PLANT(YC), SS, CC										
744	131	2	4	TM	17.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11	17	H	33E	CCS	3	4	70	FIW	N	RS	CC	RS, PLANT(YC), SS, CC										
744	131	3	4	TM	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11	15	H	33F	CCS	4	4	70	FIW	N	RS	CC	RS, PLANT(YC), SS, CC										
131					35.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0																							
744	132	1	4	TM	23.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	17	VH	74D	WHM	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, CC										
132					23.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0																							
744	138	1	4	TM	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	5	8	VH	74D	WHM	3	1	100	FNW	N	RS	CC	RS, WLPCCT, CT, CT, SW										
744	138	2	4	TM	0.0	10.4	0.0	0.0	0.0	0.0	0.0	0.0	5	9	VH	74D	WHM	3	1	100	FNW	N	RS	CC	RS, PLANT(YC), SS, WLPCCT, CT, CT, SW										
744	138	3	4	TM	0.0	12.9	0.0	0.0	0.0	0.0	0.0	0.0	6	10	VH	74D	WHM	3	1	100	FNW	N	LS	CC	RS, PLANT(YC), SS, CT, CT, SW										
138					0.0	30.1	0.0	0.0	0.0	0.0	0.0	0.0																							
=====																																			
911.4 466.8 183.3 0.0 1,561.6 42,224.0																																			

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H	S	V										T			I			R			PROPOSED								
AU	E	VI	T	L	RL	O	O	O	O	O	O	O	WH	IR	SN	ID	TE	WET	AA	OT	RT	HM	AE						
EI	I	L	U	EU	L	L	L	L	L	L	L	L	MAX	NO	M	C	M	C	M	C	RB	GH	VH						
ST	N	G#	D	VD	C4	C5	C6	C7	ACRES	TOTAL	VOLUME	MMBF	ASPECT	V00	E	P	MIN	ELEV	DW	SMU	CODE	I	G						
VCU	T#																							FUTURE MANAGEMENT					
744	66	1	4	TM	5.0	0.0	0.0	0.0	5.0	67.0	SOUTH	MM	5	19	21 E	528E	WHS	3	4	75	FNW	N	RS	CC	RS,CC				
744	66	2	4	TM	15.0	0.0	0.0	0.0	15.1	343.4	SOUTH	MM	7	15	20 E	75E	WHS	2	4	80	FNW	N	RS	CC	RS,CC				
744	66	3	4	TM	9.1	0.0	0.0	0.0	9.2	185.3	SOUTH	MM	6	16	20 E	528E	WHS	3	4	75	FNW	N	RS	CC	RS,CC				
744	66	4	4	TM	9.5	0.0	0.0	0.0	9.5	191.0	SOUTH	MM	8	14	18 E	75E	WHS	2	4	80	FNW	N	RS	CC	RS,CC				
744	66	5	4	TM	11.1	0.0	0.0	0.0	11.1	235.1	SOUTH	MM	7	11	16 E	75E	WHS	2	4	80	FNW	N	RS	CC	RS,CC				
744	66	6	4	TM	13.2	0.0	0.0	0.0	13.2	291.5	SOUTH	MM	6	10	16 E	75E	WHS	2	4	80	FNW	N	RS	CC	RS,CC				
744	66	7	4	TM	4.2	0.0	0.0	0.0	4.2	90.9	SOUTH	MM	6	14	18 E	25	CMM	1	1	30	SEC	N	RS	CC	RS,PLANT(YC),SS,CC				
744	66	8	4	TM	6.6	0.0	0.0	0.0	6.7	111.5	EAST	MM	8	11	15 E	528E	WHS	3	4	75	FNW	N	RS	CC	RS,CC				
66					54.0	0.0	0.0	0.0	54.1	1,515.8																			
744	67	1	4	TM	6.3	0.0	0.0	0.0	6.3	174.6	WEST	MM	7	8	12 VH	74F	WHM	3	1	100	FNW	N	RS	CC	RS,TMPCT,CT,CT,CC				
744	67	2	4	TM	20.4	0.0	0.0	0.0	20.4	479.6	WEST	MM	6	6	13 VH	74F	WHM	3	1	100	FNW	N	RS	CC	RS,TMPCT,CT,CT,CC				
744	67	3	4	TM	12.8	0.0	0.0	0.0	12.8	231.6	WEST	MM	5	6	12 VH	74F	WHM	3	1	100	FNW	N	RS	CC	RS,TMPCT,CT,CT,CC				
67					39.6	0.0	0.0	0.0	39.6	885.8																			
744	68	1	4	TM	6.3	0.0	0.0	0.0	6.4	73.0	WEST	MM	2	4	6 H	20C	CMB	1	1	45	FW	N	LS	CC	RS,CC				
68					6.3	0.0	0.0	0.0	6.4	73.0																			
744	72	1	4	TM	1.5	4.1	0.0	0.0	5.6	183.9	NORTH	MM	6	7	11 H	550E	CCD	3	1	68	FNW	N	RS	CC	RS,PLANT(YC),SS,CC				
744	72	2	4	TM	8.9	0.3	0.0	0.0	9.2	255.4	WEST	MM	5	7	11 VH	74E	WHM	2	1	100	FNW	N	RS	CC	RS,TMPCT,CC				
744	72	3	4	TM	5.0	0.2	0.0	0.0	5.2	144.2	WEST	MM	5	7	12 VH	74E	WHM	2	1	100	FNW	N	RS	CC	RS,TMPCT,CC				
744	72	4	4	TM	4.9	5.7	0.0	0.0	10.6	333.0	WEST	MM	6	7	14 VH	74E	WHM	2	1	100	FNW	N	RS	CC	RS,TMPCT,CC				
72					20.4	10.2	0.0	0.0	30.7	916.4																			
744	73	1	4	TM	0.8	10.9	0.1	0.0	11.9	391.3	WEST	MM	5	7	11 H	550E	CCD	3	1	68	FW	N	RS	CC	RS,CC				
744	73	2	4	TM	0.5	7.1	0.0	0.0	7.6	248.4	WEST	MM	5	7	11 H	550E	CCD	3	1	68	FW	N	RS	CC	RS,CC				
744	73	3	4	TM	4.2	2.6	0.0	0.0	6.8	126.0	WEST	MM	3	7	9 H	550E	CCD	3	1	68	FW	N	RS	CC	RS,CC				
744	73	4	4	TM	2.7	9.5	0.0	0.0	12.2	350.9	NORTH	MM	5	8	11 H	550E	CCD	3	1	68	FW	N	RS	CC	RS,PLANT(YC),SS,CC				

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H	S																																						
VCU	T#	G#	D	VD	C4	C5	C6	C7	TOTAL	VOLUME	MMBF	ASPECT	V00	E	P	MIN	MAX	NO	DW	IR	T	S	L	O	M	C	I	R	M	HM	AE	RT	PROPOSED	FUTURE MANAGEMENT					
744	82	1	4	TM	2.1	0.0	6.1	0.0	8.3	296.3	NORTH	MM	3	6	8	M	23	CMM	1	1	20	SES	N	RS	CC	RS, PLANT(YC), SS, CC													
744	82	2	4	TM	2.1	0.0	11.2	0.0	13.3	522.3	NORTH	MM	4	6	9	M	32D	CCD	2	1	80	FW	N	RS	CC	RS, PLANT(YC), SS, CC													
744	82	3	4	TM	0.6	9.8	2.0	0.0	12.5	436.7	NORTH	MM	3	7	9	M	32D	CCD	2	1	80	FW	N	RS	CC	RS, PLANT(YC), SS, CC													
82				4.9	9.8	19.3	0.0		34.1	1,255.3																													
744	83	1	4	TM	3.9	1.9	0.0	0.0	5.9	117.4	EAST	MM	2	7	8	H	33F	CCS	4	4	70	FIW	N	RS	CC	RS, PLANT(YC), SS, CC													
744	83	2	4	TM	7.3	0.3	0.0	0.0	7.6	166.1	EAST	MM	1	7	7	H	33F	CCS	4	4	70	FIW	N	RS	CC	RS, PLANT(YC), SS, CC													
744	83	3	4	TM	10.7	0.0	0.0	0.0	10.8	261.4	EAST	MM	2	6	7	H	33F	CCS	4	4	70	FIW	N	RS	CC	RS, PLANT(YC), SS, CC													
83				22.0	2.2	0.0	0.0		24.3	545.0																													
744	84	1	4	TM	20.6	0.0	0.0	0.0	20.6	558.2	NORTH	MM	4	12	16	H	33E	CCS	3	4	70	FIW	N	HE	SW	FH, RS, R&W, 2-SW													
84				20.6	0.0	0.0	0.0		20.6	558.2																													
744	85	1	4	TM	7.0	42.6	0.0	0.0	49.6	1,531.7	EAST	MM	7	7	18	VH	19E	WHC	3	1	65	FW	N	HE	SW	FH, RS, R&W, 2-SW													
85				7.0	42.6	0.0	0.0		49.6	1,531.7																													
744	86	1	4	TM	3.7	0.0	0.0	0.0	3.7	99.5	SOUTH	MM	3	4	6	H	320D	CCD	3	1	60	FW	N	RS	CC	RS, PLANT(YC), SS, CC													
744	86	2	4	TM	6.1	0.0	0.0	0.0	6.1	157.9	SOUTH	MM	2	4	5	H	320D	CCD	3	1	60	FW	N	RS	CC	RS, PLANT(YC), SS, CC													
744	86	3	4	TM	3.1	1.7	0.0	0.0	4.9	127.5	SOUTH	MM	1	3	4	H	320D	CCD	3	1	60	FW	N	SH	CC	RS, PLANT(YC), SS, CC													
86				12.9	1.7	0.0	0.0		14.7	384.9																													
737	92	1	4	TM	9.0	0.4	0.0	0.0	9.4	260.1	NORTH	MO	4	8	12	H	550D	CCD	3	1	70	FW	N	RS	CC	RS, PLANT(YC), SS, CC													
737	92	2	4	TM	13.1	0.0	0.0	0.0	13.2	363.6	WEST	MO	2	7	9	H	550D	CCD	3	1	70	FW	N	RS	CC	RS, PLANT(YC), SS, CC													
737	92	3	4	TM	3.7	11.8	0.0	0.0	15.6	511.3	WEST	MO	4	8	11	H	550D	CCD	3	1	70	FW	N	RS	CC	RS, PLANT(YC), SS, CC													
737	92	4	4	TM	6.3	5.0	0.0	0.0	11.3	345.0	WEST	MO	4	10	13	H	550D	CCD	3	1	70	FW	N	SH	CC	RS, PLANT(YC), SS, CC													
737	92	5	4	TM	5.9	0.0	0.0	0.0	5.9	162.2	WEST	MO	3	11	13	H	550D	CCD	3	1	70	FW	N	RS	CC	RS, PLANT(YC), SS, CC													
737	92	6	4	TM	3.6	0.0	0.0	0.0	3.6	99.4	WEST	MO	2	8	9	H	49D	CMM	1	1	20	FEF	N	RS	CC	RS, CC													
737	92	7	4	TM	11.4	0.2	0.0	0.0	11.7	323.1	NORTH	MO	3	7	10	H	49D	CMM	1	1	20	FEF	N	RS	CC	RS, CC													
92				53.1	17.4	0.0	0.0		70.6	2,064.6																													
746	112	1	4	ML	1.6	8.2	0.0	0.0	9.8	296.6	EAST	MM	2	3	4	H	1D	WDC	2	1	100	FWW	N	RS	CC	RS, PLANT(YC), SS, TMPCT, CT, SW													
112				1.6	8.2	0.0	0.0		9.8	296.6																													

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H AU RN VI EI ST T#	S E T I N G#	D L U D	VD	C4	C5	C6	C7	TOTAL ACRES	VOLUME	MMBF	ASPECT	V00	P E	MIN ELEV	MAX NO DW	T WH IR	ECO CODE	M I	M C	M G	EX HAB	WET AA	OT RT	HM AE	PROPOSED FUTURE MANAGEMENT
746 116	1	4	ML	1.9	2.0	0.0	0.0	4.0	124.6	SOUTH	MM	3	4	6	H	528D	WHS	2	4	75	FNW	N	RS	CC	RS,CC
746 116	2	4	ML	5.7	0.2	0.0	0.0	6.0	163.2	SOUTH	MM	3	4	5	M	25	CMM	1	1	30	SEC	N	RS	CC	RS,PLANT(YC),SS,CC
116				7.7	2.2	0.0	0.0	10.0	287.8																
746 117	1	4	ML	0.0	3.6	0.0	0.0	3.6	124.7	EAST	PR	4	4	6	H	528D	WHS	2	4	75	FNW	N	RS	CC	RS,CC
117				0.0	3.6	0.0	0.0	3.6	124.7																
746 122	1	4	SV	0.3	5.6	0.0	0.0	6.0	198.1	EAST	PR	1	8	10	H	2D	WDC	2	1	100	FNW	N	HE	SW	FH,RS,R&W,2-SW
122				0.3	5.6	0.0	0.0	6.0	198.1																
746 125	1	4	TM	3.4	0.0	0.0	0.0	3.5	72.8	EAST	MM	1	3	3	M	25	CMM	1	1	30	SEC	N	RS	CC	RS,PLANT(YC),SS,CC
125				3.4	0.0	0.0	0.0	3.5	72.8																
746 126	1	4	ML	5.1	0.2	0.0	0.0	5.4	128.7	EAST	MM	1	2	2	M	25	CMM	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC
746 126	2	4	ML	2.7	1.1	0.0	0.0	3.8	108.5	EAST	MM	1	2	2	M	25	CMM	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC
746 126	3	4	ML	1.6	0.5	0.0	0.0	2.1	41.3	EAST	MM	1	2	2	M	25	CMM	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC
126				9.5	1.8	0.0	0.0	11.4	278.5																
746 127	1	4	TM	8.8	0.0	0.0	0.0	8.8	204.9	NORTH	MM	1	2	4	M	25	CMM	1	1	30	SEC	N	SH	CC	RS,CC
127				8.8	0.0	0.0	0.0	8.8	204.9																
744 129	1	4	TM	6.4	0.0	0.0	0.0	6.5	57.1	NONE	MM	2	8	9	L	25	CMM	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC
744 129	2	4	TM	6.5	0.0	0.0	0.0	6.5	57.4	WEST	MM	2	9	10	L	23	CMM	1	1	20	SEC	N	SH	CC	RS,PLANT(YC),SS,CC
744 129	3	4	TM	4.1	0.0	0.0	0.0	4.1	36.3	SOUTH	MM	2	8	9	L	25	CMM	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC
744 129	4	4	TM	26.1	0.0	0.0	0.0	26.2	230.5	SOUTH	MM	2	7	9	L	25	CMM	1	1	30	SEC	N	RS	CC	RS,PLANT(YC),SS,CC
744 129	5	4	TM	11.4	0.0	0.0	0.0	11.5	101.0	SOUTH	MM	2	6	8	L	25	CMM	1	1	30	SEC	N	SH	CC	RS,PLANT(YC),SS,CC
129				54.8	0.0	0.0	0.0	54.8	482.4																
744 130	1	4	TM	14.2	0.0	5.9	0.0	20.1	657.6	WEST	MM	5	9	14	VH	528F	WHS	3	4	75	FNW	N	RS	CC	RS,PLANT(YC),SS,CC
744 130	2	4	TM	15.1	0.0	4.4	0.0	19.5	597.8	NORTH	MM	4	9	11	VH	528F	WHS	3	4	75	FNW	N	RS	CC	RS,PLANT(YC),SS,CC
130				29.3	0.0	10.3	0.0	39.6	1,255.4																

UPPER CARROLL DRAFT EIS - APPENDIX H

Appendix I

**Sale Area
Improvements/KV
Opportunities**

Ketchikan Area
Ketchikan Pulp Company Long-Term Sale
Upper Carroll Project Area
Recommended Sale Area Improvement Projects

I. ESSENTIAL REFORESTATION

A. Natural Regeneration Surveys

Objective/Justification: Monitor the occurrence of natural regeneration stocking following timber harvest. The National Forest Management Act of 1976 states that "It is the policy of Congress that all forested lands in the National Forest system shall be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth, and condition of stand designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans".

Treatment: Stocking surveys shall be conducted three growing seasons following harvest to assure that satisfactory levels of natural stocking have been achieved as prescribed in the stocking level guides, Chapter 9, FSH 2409.17. The reporting and record keeping required to track and monitor the harvesting, regeneration, certification process is included in the regeneration survey costs.

Needs/Cost: Conduct natural regeneration stocking surveys at a direct cost of \$8.50/acre. See the enclosed detailed listing of stands in need of surveys by alternative.

$$\text{\$8.50/acre} \times 1.04^5(1.217) = 10.34 \times 1.5112(\text{OH}) = \text{\$15.63/acre}$$

Work Summary:

Regeneration
Surveys

Alternative #2 \$14.27 acre	*2,193 acres	\$ 34,277 cost
Alternative #3 \$14.27 acre	1,019 acres	\$ 15,927 cost
Alternative #4 \$14.27 acre	1,334 acres	\$ 20,850 cost
Alternative #5 \$14.27 acre	1,748 acres	\$ 27,321 cost

* Minus planting acres

B. Cone Collection

Objective/Justification: Collect an adequate amount of tree seed from the appropriate seed zones to accomplish required artificial regeneration under this plan. All seed will be collected from phenotypically superior trees which exhibit desirable characteristics such as form, height, branch angle, resistance to insects and disease, etc. Ketchikan Area has sufficient spruce seed on hand to meet its spruce planting needs. The Area, however, lacks seed for Alaska and western redcedar planting. Planting roughly 300 acres of cedar (western redcedar and Alaska yellow cedar) in all action alternatives will require (300 AC X 300 TPA) 90,000 seedlings. Approximately 40,000 seedlings can be produced per pound of clean seed. Therefore 2.25 pounds of clean seed or 11 bushels (5 bushels/lb seed) of cones must be collected.

Treatment: Cone collections will occur in moderate or good cone collecting years based on field surveys. Collections will be done by force account crews in the fall after the cones have matured. Collection will involve identifying phenotypically superior trees, felling the tree, picking and bagging the cones, tagging the bags and transporting the cones to Petersburg where the seed will be cleaned and stored until needed. Seed collections will be stratified by seed zones to make sure the planting stock is adapted to location where it will be planted.

Needs/Cost: Collect 11 bushels of seed from the appropriate seed zones at a direct cost of \$250.00/bushel.

$$\$250.00/\text{Bul} \times 1.04^2 (1.082) = \$270.40 \times 1.5112(\text{OH}) = \$408.63/\text{Bul}$$

Work Summary:

Cone
Collection

All Action			
Alternatives	\$408.63/bushel X 11 bushels	=	\$ 4,494.93 cost

C. Planting

Objective/Justification: Planting will occur only on those sites where natural regeneration will not result in a fully stocked stand of desirable species within 5 years after harvest as required under the National Forest Management Act of 1976.

The requirements and guidelines for minimum acceptable stocking are listed in FSH 2409.17 Silvicultural Practices Handbook. Appendix A displays the harvest unit, acres and species to be planted on a site specific basis.

The sites to be planted fall under three general categories:

1. Floodplains and Alluvial Fans - These areas usually have deep well drained soils with poorly developed horizons due to periodic flooding. Mature stands rarely support more than 100-150 stems per acre. Species composition is primarily spruce growing on raised hummocks. Perturbation results in heavy brush (alder, salmonberry, and devils club) competition that will delay natural regeneration and suppress tree growth for a period of 20 to 50 years following harvest. The vast majority of the Tonowek and Tuxekan soil series have been excluded from harvesting in recent years, but small inclusions will be treated in this operating period. These sites will be planted with Sitka spruce.
2. Dense Brush or Inadequate Seed Source - Sparsely stocked sites with an established ground cover of dense vegetation such as salmonberry or devils club will retard stocking and growth for at least 20 years. Sites lacking a satisfactory seed source, including high elevation sites, sites adjacent to muskegs or lakes and immature stands where natural regeneration cannot be assured or even reasonably expected within 5 years after harvest. These sites will be planted with Sitka spruce.
3. Somewhat Poorly Drained to Poorly Drained Soils, Low Productivity Cedar Sites - These sites currently support decadent, low-quality sawtimber with cedar making up at least 10 percent of the canopy. Getting natural cedar regeneration on these sites is unlikely because:
 - a. Cedar has limited capabilities to disperse seed over long distances from the parent tree. Alaska-cedar seed dispersion is limited to 300-400 feet.
 - b. Alaska cedar is not a prolific seed producer. Cone crops are infrequent and germination rates are low.
 - c. Unlike "down-south" cedar, southeast Alaska cedar display a greater degree of intolerance to shade. Local cedar is unable to regenerate under its own canopy and advance cedar reproduction is generally absent on the forest floor.
 - d. Low-volume cedar stands often result in heavy slash accumulation which can inhibit natural reproduction. Prescribed burning may be required to lower slash levels for planting ease.

Therefore, planting of western redcedar and/or Alaska-cedar to improve productivity and maintain tree species diversity, shall be addressed in the silvicultural prescription for cedar stands. "Relationship of Forest Plant Association to Soils Series...Ketchikan Area" tables, which are found in the back of Preliminary Forest Plant Association Management Guide, Ketchikan Area, was used to identify potential sites.

Treatment: Floodplains/alluvial fans and dense shrub/inadequate seed source planting areas will be planted with 1-0 Sitka spruce stock. The low productivity/Cedar sites will be planted with 1-0 western redcedar or Alaska-cedar as specified in Appendix A. Generally a mixture of western redcedar and Alaska yellow cedar will be planted on sites below 800 feet in elevation on North and East Aspects, and below 1000 feet on South and West aspects. Cedar sites with elevations above those listed have been scheduled for Alaska yellow cedar planting only.

Needs/Cost: The direct cost of planting is \$300.00 per acre. See enclosed detailed listing of stands requiring treatment/alternative.

$$\$300.00/\text{acre} \times 1.04^5 (1.217) = \$365.00 \times 1.5112(\text{OH}) = \$551.58/\text{acre}$$

Work Summary:

Planting

Alternative #2	\$551.58/acre	X	305 acres	= \$168,231.90 cost
Alternative #3	\$551.58/acre	X	173 acres	= \$ 95,423.34 cost
Alternative #4	\$551.58/acre	X	228 acres	= \$125,760.24 cost
Alternative #5	\$551.58/acre	X	234 acres	= \$129,069.72 cost

D. Plantation Survival Surveys

Objective/Justification: Monitor the survival and condition of planted trees one and three growing seasons following planting and certify that minimum stocking levels are achieved per NFMA.

Treatment: Establish and survey plantation survival stake rows the first and third growing seasons following planting. The third year survey will also determine the overall stocking, both planted and established natural regeneration.

Needs/Cost: First and third year survival surveys will be required at a direct cost of \$17.00 per acre. See enclosed detailed listing of stands needing surveys by alternative.

$$\$17.00/\text{acre} \times 1.04^6 (1.265) = \$21.51 \times 1.5112(\text{OH}) = \$32.51/\text{acre}$$

Work Summary:

Plantation Survival Surveys

Alternative #2	\$32.51/acre	305 acres	\$ 9,915.55 cost
Alternative #3	\$32.51/acre	173 acres	\$ 5,624.23 cost
Alternative #4	\$32.51/acre	228 acres	\$ 7,412.28 cost
Alternative #5	\$32.51/acre	234 acres	\$ 7,607.34 cost

II. MITIGATION

A. Debris Slides Stabilization and Rehabilitation and Debris Slide Rehabilitation Monitoring

Objective/Justification: Stabilize and rehabilitate harvest-activity initiated landslides within units and along roads which are no longer the responsibility of the purchaser to treat.

Approximately one debris slide, 5 acres or larger, occurs for every 2,240 harvested acres Tongass wide (DEIS Tongass Land Management Plan Revision, June 1990). If slides smaller than 5 acres are included, than the number of debris slides occurring for every 2,240 harvested acres would increase one and one half fold. Average size of slides on the Ketchikan Area are 5 acres (Loggy 1974).

The majority of these slides normally occur within a 5 to 10 year period after cutting or roading from the following combined impacts:

1. Over steepen side slopes,
2. Storms with high wind and /or intensive rain fall, and
3. Where roots of severed trees have lost their holding strength in 3 to 5 years.

Approximately 1,192 to 2,498 acres are proposed for harvest this period. This would equate to .53 to 1.12 natural slides and slides with harvest. At 5 acres per slide this would equate to 2.65 to 5.6 acres of soil disturbance that would need stabilizing and rehabilitation.

Treatment: Slides that have occurred will be rehabilitated with introduced grasses and/or herbaceous vegetation. Follow up monitoring will be done for two (2) years after initial rehabilitation to insure stabilization has been accomplished.

The treatment is to stabilize surface soil erosion to prevent or reduce further sediment introduction into streams and/or lost in soil productivity of the remaining soil on the slide trace.

Needs/Cost: Stabilize 5.6 acres of landslides at a direct cost of \$2000 per acre. Monitor each stabilized landslide for 2 years after initiation stabilization at \$500 per slide, per year.

$$\$2,000/\text{ac.} \times 1.04^6 (1.265) = 2,530.64 \times 1.3798(\text{OH}) = \$3,491.77/\text{ac.}$$

$$\$500/\text{ea.} \times 1.04^6 (1.265) = 632.66 \times 1.3798(\text{OH}) = \$872.94/\text{Slide}$$

Work Summary: All Alternatives use 1.12 slides and 5.6 acre estimate.

Slide Rehabilitation	\$3,492/acre	5.6 acres	\$ 19,555 cost
Monitor stabilized	\$ 873/slide	1.12 slides	\$ 978 cost

B. Soil Stability/Wildlife Seeding of Roads - 35 Acres

Objective/Justification: This project is consistent with Regional and Forest direction to maintain or enhance wildlife habitat capability. The Long-Term Sale FEIS prescribed wildlife seeding as a mitigation measure.

The objective is to increase forage production within and adjacent to harvest units to benefit Sitka Black-tailed Deer, Black Bear, Blue Grouse, Dusky and Vancouver Canada Geese, and successional nongame birds. A secondary objective would be to minimize sedimentation and inhibit alder regrowth.

Treatment: Ketchikan Pulp Co. is responsible for seeding all temporary roads and landings used during the current operating period. However, we anticipate that there will be some seeding failures. Therefore, treatment will include re-seeding of temporary roads, and landings where initial seeding attempts failed; and seeding specified roads, which have been closed to vehicle access. Seed mixture will contain birds-foot Trefoil 12#/ac, Vetch 12#/ac, Panic Grass 8#/ac, Reed Canary Grass 8#/ac, and Alta Fescue 6#/ac, or a mixture of other plants.

System roads designated for closure and wildlife forage seeding are displayed in the Upper Carroll DEIS under transportation.

Needs/Costs: The direct cost for hand seeding is \$500 per ac.

$$\$500/\text{acre} \times 1.04^2 (1.082) = \$540.80/\text{acre} \times 1.3798(\text{OH}) = \$746/\text{acre}$$

Approximately 35 acres will be treated under all of the action alternatives

Work Summary:

Wildlife Seeding	\$746/acre	35 acres	\$26,110.00 cost
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KV Cost Breakdown Table

Project Name	Personnel - Includes Contract Prep and Administration	Subsistence	Travel - FW, Helicopter, Boat, Vehicle, other	Other - Facilities, Equipment, Contracts, etc.	Rate (Cost/Unit) Total Expenses
<u>I. ESSENTIAL REFORESTATION</u>					
A. Natural Regeneration Surveys (3 & 5 Years)	\$ 4.88/Ac. <u>2/</u>	\$ 0.48	\$ 0.64	\$ 2.50 <u>3/</u>	\$ 8.50/Acre ¹
B. Cone Collection	\$184.00/Bushel	\$ 0.00	\$13.00	\$ 53.00	\$250.00/Bushel
C. Planting	\$ 74.00/Ac.	\$ 0.00	\$53.00 <u>4/</u>	\$223.00 <u>5/</u>	\$350.00/Acre
D. Plantation Survival Surveys (1 & 3 Years)	\$ 8.00/Ac.	\$ 0.48	\$ 4.02	\$ 1.50	\$ 14.00/Acre
E. Release & Weeding (Dwarf Mistletoe Sanitation)	\$ 84.00/Ac.	\$ 0.00	\$ 0.00	\$116.00 (contract)	\$200.00/Acre
<u>II. MITIGATION</u>					
A. Slide Stabilization Plus 2 Year Monitoring	\$333.00/Ac. \$333.00/Slide		(Helicopter) \$1,417.00 \$125.00	(Seed & Fert.) \$250.00 \$ 42.00	\$2,000/Acre \$ 500/Slide
B. Wildlife Road Seeding	\$318.00/Ac.		\$ 32.00	\$150.00	\$ 500/Acre

1/ A 15% facilities support charge not included in overhead calculations has been assigned here.

2/ Includes office and field work associated with surveys, plus database updates & record keeping.

3/ The prorated cost of reprocurring aerial photography necessary during the regeneration process & database updates

4/ Includes the cost of personnel travel and transportation of the seedlings.

5/ Includes the cost of the planting contract, seedlings, coolers, and other facilities.

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 2

PAGE 1 OF 3

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE & WEED	REGENERATION SURVEYS
1	39.00	10	10	0	39.00
5	97.49	5	5	0	97.49
6	43.81	8	8	0	43.81
7	36.36	0	0	0	36.36
8	91.86	13	13	0	91.86
9	92.89	23	23	0	92.89
11	29.88	6	6	0	29.88
12	38.27	0	0	0	38.27
13	37.41	0	0	0	37.41
14	11.30	0	0	0	11.30
15	33.59	3	3	0	33.59
16	104.10	0	0	0	104.10
17	36.92	0	0	0	36.92
18	43.33	6	6	0	43.33
19	20.29	5	5	0	20.29
20	43.72	6	6	0	43.72
21	7.72	7	7	0	7.72
22	34.56	15	15	0	34.56
24	30.04	3	3	30	30.04
28	22.23	2	2	0	22.23
29	5.90	0	0	0	5.90
30	21.29	0	0	0	21.29
35	25.20	0	0	0	25.20
37	26.80	1	1	0	26.80
41	12.88	3	3	0	12.88
47	25.16	3	3	0	25.16
48	11.69	0	0	0	11.69
49	53.15	10	10	0	53.15
51	32.76	30	30	0	32.76
52	47.79	5	5	0	47.79
53	33.42	6	6	0	33.42
55	17.63	6	6	0	17.63
57	39.92	0	0	0	39.92
59	43.57	0	0	0	43.57
61	28.51	0	0	0	28.51

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 2

PAGE 2 OF 3

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE & WEED	REGENERATION SURVEYS
62	44.22	0	0	0	44.22
66	54.97	3	3	0	54.97
67	39.60	0	0	0	39.60
68	6.35	0	0	0	6.35
72	30.70	3	3	0	30.70
73	38.45	3	3	0	38.45
74	5.07	0	0	0	5.07
75	26.98	3	3	0	26.98
76	32.86	3	3	0	32.86
77	7.22	1	1	0	7.22
81	29.10	6	6	0	29.10
82	34.07	3	3	0	34.07
83	24.28	3	3	0	24.28
84	20.62	0	0	0	20.62
85	49.56	0	0	0	49.56
86	14.68	3	3	0	14.68
90	10.19	0	0	0	10.19
92	70.61	12	12	0	70.61
93	56.36	8	8	0	56.36
95	19.56	3	3	0	19.56
97	18.58	3	3	0	18.58
98	31.32	3	3	0	31.32
99	60.03	0	0	0	60.03
104	25.98	0	0	0	25.98
106	47.15	10	10	0	47.15
107	22.68	0	0	0	22.68
108	6.77	1	1	0	6.77
110	14.02	4	4	0	14.02
111	13.99	3	3	0	13.99
112	9.84	4	4	0	9.84
113	7.35	3	3	0	7.35
116	10.00	3	3	0	10.00
117	3.60	0	0	0	3.60
119	6.38	3	3	0	6.38
120	20.11	0	0	0	20.11

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 2

PAGE 3 OF 3

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE & WEED	REGENERATION SURVEYS
121	5.02	0	0	0	5.02
122	6.02	0	0	0	6.02
123	15.73	0	0	0	15.73
124	20.47	0	0	0	20.47
125	3.46	3	3	0	3.46
126	11.36	3	3	0	11.36
127	8.83	0	0	0	8.83
129	54.81	8	8	0	54.81
130	25.38	6	6	0	25.38
131	35.68	8	8	0	35.68
132	23.69	8	8	0	23.69
133	12.24	0	0	0	12.24
138	30.15	2	2	0	30.15
=====					
	2,497.18	305	305	30	2,497.18

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 3

PAGE 1 OF 2

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE & WEED	REGENERATION SURVEYS
3	57.83	3	3	0	57.83
8	91.86	13	13	0	91.86
9	92.89	23	23	0	92.89
10	29.18	3	3	0	29.18
16	104.11	0	0	0	104.11
19	20.29	5	5	0	20.29
20	43.72	6	6	0	43.72
21	7.72	7	7	0	7.72
22	34.56	15	15	0	34.56
27	32.74	5	5	0	32.74
28	22.23	2	2	0	22.23
35	25.20	0	0	0	25.20
38	10.23	0	0	0	10.23
41	12.88	3	3	0	12.88
43	29.09	3	3	16	29.09
47	25.16	3	3	0	25.16
49	53.15	10	10	0	53.15
51	32.76	30	30	0	32.76
55	17.63	6	6	0	17.63
57	39.92	0	0	0	39.92
58	17.69	3	3	0	17.69
59	43.57	0	0	0	43.57
61	28.51	0	0	0	28.51
64	11.21	0	0	0	11.21
65	29.30	3	3	0	29.30
66	54.98	3	3	0	54.98
67	39.60	0	0	0	39.60
68	6.35	0	0	0	6.35
72	30.70	3	3	0	30.70
111	13.99	3	3	0	13.99
112	9.84	4	4	0	9.84
113	7.35	3	3	0	7.35
116	10.00	3	3	0	10.00
117	3.60	0	0	0	3.60
119	6.38	3	3	0	6.38

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 3

PAGE 2 OF 2

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE & WEED	REGENERATION SURVEYS
120	20.11	0	0	0	20.11
121	5.02	0	0	0	5.02
122	6.02	0	0	0	6.02
125	3.46	3	3	0	3.46
126	11.36	3	3	0	11.36
127	8.83	0	0	0	8.83
138	30.15	2	2	0	30.15
	=====	===	===	===	=====
	1,191.71	173	173	16	1,191.71

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 4

PAGE 1 OF 2

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE & WEED	REGENERATION SURVEYS
2	55.07	3	2	0	55.07
3	57.83	3	3	0	57.83
8	91.86	13	13	0	91.86
9	92.89	23	23	0	92.89
10	29.18	3	3	0	29.18
15	33.59	3	3	0	33.59
16	104.11	0	0	0	104.11
19	20.29	5	5	0	20.29
20	43.72	6	6	0	43.72
21	7.72	7	7	0	7.72
22	34.56	15	15	0	34.56
29	5.90	0	0	0	5.90
30	21.29	0	0	0	21.29
35	25.20	0	0	0	25.20
37	26.80	1	1	0	26.80
43	29.09	3	3	16	29.09
45	16.78	3	3	0	16.78
49	53.15	10	10	0	53.15
50	11.00	0	0	0	11.00
51	32.76	30	30	0	32.76
53	33.42	6	6	0	33.42
55	17.63	6	6	0	17.63
58	17.69	3	3	0	17.69
59	43.57	0	0	0	43.57
61	28.51	0	0	0	28.51
62	44.22	0	0	0	44.22
66	54.98	3	3	0	54.98
69	20.41	0	0	0	20.41
70	55.03	18	18	0	55.03
71	27.06	0	0	27	27.06
73	38.45	3	3	0	38.45
74	5.07	0	0	0	5.07
75	26.98	3	3	0	26.98
83	24.28	3	3	0	24.28
108	6.77	1	1	0	6.77
111	13.99	3	3	0	13.99
112	9.84	4	4	0	9.84
113	7.35	3	3	0	7.35
116	10.00	3	3	0	10.00

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 4

PAGE 2 OF 2

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE & WEED	REGENERATION SURVEYS
117	3.60	0	0	0	3.60
119	6.38	3	3	0	6.38
120	20.11	0	0	0	20.11
121	5.02	0	0	0	5.02
122	6.02	0	0	0	6.02
123	15.73	0	0	0	15.73
124	20.47	0	0	0	20.47
125	3.46	3	3	0	3.46
126	11.36	3	3	0	11.36
127	8.83	0	0	0	8.83
129	54.81	8	8	0	54.81
130	25.38	6	6	0	25.38
131	35.68	8	8	0	35.68
132	23.69	8	8	0	23.69
138	30.15	2	2	0	30.15
=====					
	1,561.31	228	228	44	1,561.31

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 5

PAGE 1 of 2

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE &WEED	REGENERATION SURVEYS
3	57.83	3	3	0	57.83
4	95.77	10	10	27	95.77
5	97.49	5	5	0	97.49
6	43.81	8	8	0	43.81
7	36.36	0	0	0	36.36
8	91.86	13	13	0	91.86
9	92.89	23	23	0	92.89
10	29.18	3	3	0	29.18
11	29.88	6	6	0	29.88
12	38.27	0	0	0	38.27
15	33.59	3	3	0	33.59
16	104.11	0	0	0	104.11
19	20.29	5	5	0	20.29
20	43.72	6	6	0	43.72
21	7.72	7	7	0	7.72
22	34.56	15	15	0	34.56
24	30.04	3	3	30	30.04
28	22.23	2	2	0	22.23
29	5.90	0	0	0	5.90
35	25.20	0	0	0	25.20
38	10.23	0	0	0	10.23
40	6.76	3	3	0	6.76
41	12.88	3	3	0	12.88
47	25.16	3	3	0	25.16
48	11.69	0	0	0	11.69
49	53.15	10	10	0	53.15
55	17.63	6	6	0	17.63
57	39.92	0	0	0	39.92
58	17.69	3	3	0	17.69
59	43.57	0	0	0	43.57
61	28.51	0	0	0	28.51
66	54.97	3	3	0	54.97
67	39.60	0	0	0	39.60
68	6.35	0	0	0	6.35
72	30.70	3	3	0	30.70
73	38.45	3	3	0	38.45
74	5.07	0	0	0	5.07
75	26.98	3	3	0	26.98
76	32.86	3	3	0	32.86
77	7.22	1	1	0	7.22

UPPER CARROLL PROJECT AREA
PROPOSED ESSENTIAL REFORESTATION PROJECTS

ALTERNATIVE 5

PAGE 2 of 2

UNIT NUMBER	UNIT ACRES	TREE PLANTING	SURVIVAL SURVEYS	RELEASE &WEED	REGENERATION SURVEYS
79	26.94	3	3	0	26.94
80	46.10	3	3	0	46.10
81	29.10	6	6	0	29.10
82	34.07	3	3	0	34.07
83	24.28	3	3	0	24.28
84	20.62	0	0	0	20.62
85	49.56	0	0	0	49.56
86	14.68	3	3	0	14.68
92	70.61	12	12	0	70.61
112	9.84	4	4	0	9.84
116	10.00	3	3	0	10.00
117	3.60	0	0	0	3.60
122	6.02	0	0	0	6.02
125	3.46	3	3	0	3.46
126	11.36	3	3	0	11.36
127	8.83	0	0	0	8.83
129	54.81	8	8	0	54.81
130	25.38	6	6	0	25.38
131	35.68	8	8	0	35.68
132	23.69	8	8	0	23.69
138	30.15	2	2	0	30.15
=====					
	1,981.37	234	234	57	1,981.37

Appendix J

Deer Availability/ Deer Demand Maps

Deer Demand as a Percentage of Deer Supply: 1990 and 2040

SOURCE: ADF&G Division of Subsistence, Toss
Analysis Maps, Chatham Area GIS

Figure E-47 cont.
1990 Deer Demand as a Percentage
of Deer Supply



Note: This map displays deer demand (projected harvest) as a percentage of the 1990 deer supply (10% of the habitat capability) for each Wildlife Analysis Area (WAA). Areas where demand for deer exceeds 120 percent of the WAA supply, indicate that existing deer habitat is not sufficient to sustain present harvest levels. Harvest data is from Alaska Dept. of Fish and Game (ADF&G) 1987-1990 deer hunter surveys; deer habitat capability estimates are from the Tongass Land Management Plan Revision (TLMP).

Source: ADF&G Div. of Subsistence Toss Analysis Map III, Chatham Area GIS

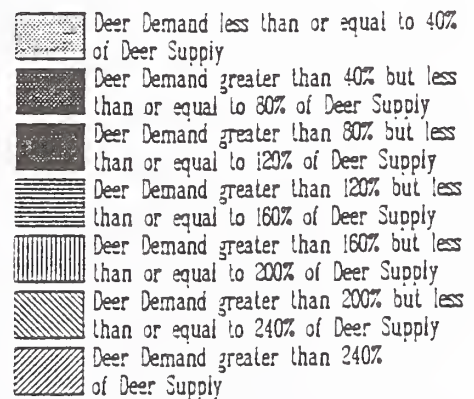
- Deer Demand less than or equal to 40% of Deer Supply
- Deer Demand greater than 40% but less than or equal to 80% of Deer Supply
- Deer Demand greater than 80% but less than or equal to 120% of Deer Supply
- Deer Demand greater than 120% but less than or equal to 160% of Deer Supply
- Deer Demand greater than 160% but less than or equal to 200% of Deer Supply
- Deer Demand greater than 200% but less than or equal to 240% of Deer Supply
- Deer Demand greater than 240% of Deer Supply

Figure 3-48 cont.
2040 Projected Deer Demand as a Percentage
of Deer Supply



Note: This map displays deer demand (1987-90 mean harvest) versus deer supply (100% of habitat capability) 50 years from now for each Wildlife Analysis Area (VAA). Demand is assumed to increase with projected population growth at 1.5% per decade through 2010 and 1.5% per decade through 2040. Areas where demand for deer exceeds 120 percent of the VAA supply, indicate that existing deer habitat is not sufficient to sustain present harvest levels. Harvest data is from Alaska Dept. of Fish and Game (ADF&G) 1987-1990 deer hunter surveys; deer habitat capability estimates are from the Tongass Land Management Plan Revision (TLMP).

Source: ADF&G Div. of Subsistence Toss Analysis Map 112, Chatham Area GIS.



Appendix K

Unit and Road Cards

APPENDIX K

Unit Cards part 1

Appendix K

Unit Cards

Unit cards have been developed for each harvest unit and associated road proposed for the Upper Carroll Draft Environmental Impact Statement (EIS). These cards are intended to display site-specific information, enabling the public to more fully understand harvest implications. They also serve as a mechanism to pass on information gathered during office reconnaissance of the proposed harvest units to Forest Service field personnel, as well as to provide a vehicle for field recon observations to be routed back to the Interdisciplinary Team (IDT) for consideration.

The Unit Cards consist of two parts: (1) a detailed description of the unit, and (2) a schematic map. The map displays the proposed unit and associated roads in the center of the page. Other features shown include: streamcourses, existing roads, previously harvested areas, contour lines, lakes, saltwater, and eagle nests.

The reverse side of the card provides a physical description of the unit, as well as identification of resource concerns which must be considered during implementation of harvest. The physical description includes the location, planned acreage, estimated sawlog plus utility volume, silvicultural system, predominant forest type, aspect, and a breakdown by volume class, elevation range, and soil mass movement index. Resource considerations are identified for soils, timber, engineering, fisheries/watersheds, wildlife, recreation, visuals, lands, cultural resources, and geology.

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 1 Planned Acres: 39.0 Estimated Volume: 982.4 In Alternatives: 2, 0, 0, 0
 Silvicultural System: Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-2 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D58A WAA: 406 NOI Unit: 1000 Original LSTA Unit: 744-524

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 32.5 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SE
 Volume class breakdown: Class 4: 27.9 Class 5: 4.6 Class 6: 0.0 Class 7: 0.0 Low Productive 6.5
 Archeology 0-100: 0.0 100-200: 0.0 Seen 39.0 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 20 Medium 19 High 0 Very High 0.0 Wetland 20 Mix Wetland 19
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

South-central part of unit (M-12) contains about 20 acres of forested wetlands, low-volume, mixed conifer plant series. Recommend partial log suspension (BMPs 12.5 and 13.9). V-notch and water quality stream runs through middle of unit (L-14 to N-12) and north unit boundary (N-17 to P-15). Recommend split yarding between settings 1 and 2 on this V-notch (BMP 13.9). NRB 8/9/95

TIMBER INPUT

Planned logging system design for this unit is Running Skyline. Confirm final road and landing locations. Verify feasibility of split yarding Class III streams within unit and adjust roads, landings, or modify unit boundary if required.

ENGINEERING INPUT

Pink/Chum timing (June 1 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is adjacent to a Class II stream and will require a 100 foot TTRA buffer (BMP 12.6a). Two water quality streams have been identified, one in the north end and another in the southwest end of the unit (BMP 12.6). SPL 1/2/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit is visible from Carroll Inlet. Adopted VQO is modification. Beach and estuary buffers will help to screen unit.

LANDS INPUT

No concerns. NRB 8/9/95

CULTURAL RESOURCE INPUT

No concerns within unit. Road access into unit passes through high probability areas that have been surveyed. However, final road locations will need to be evaluated again during layout.

GEOLOGICAL INPUT

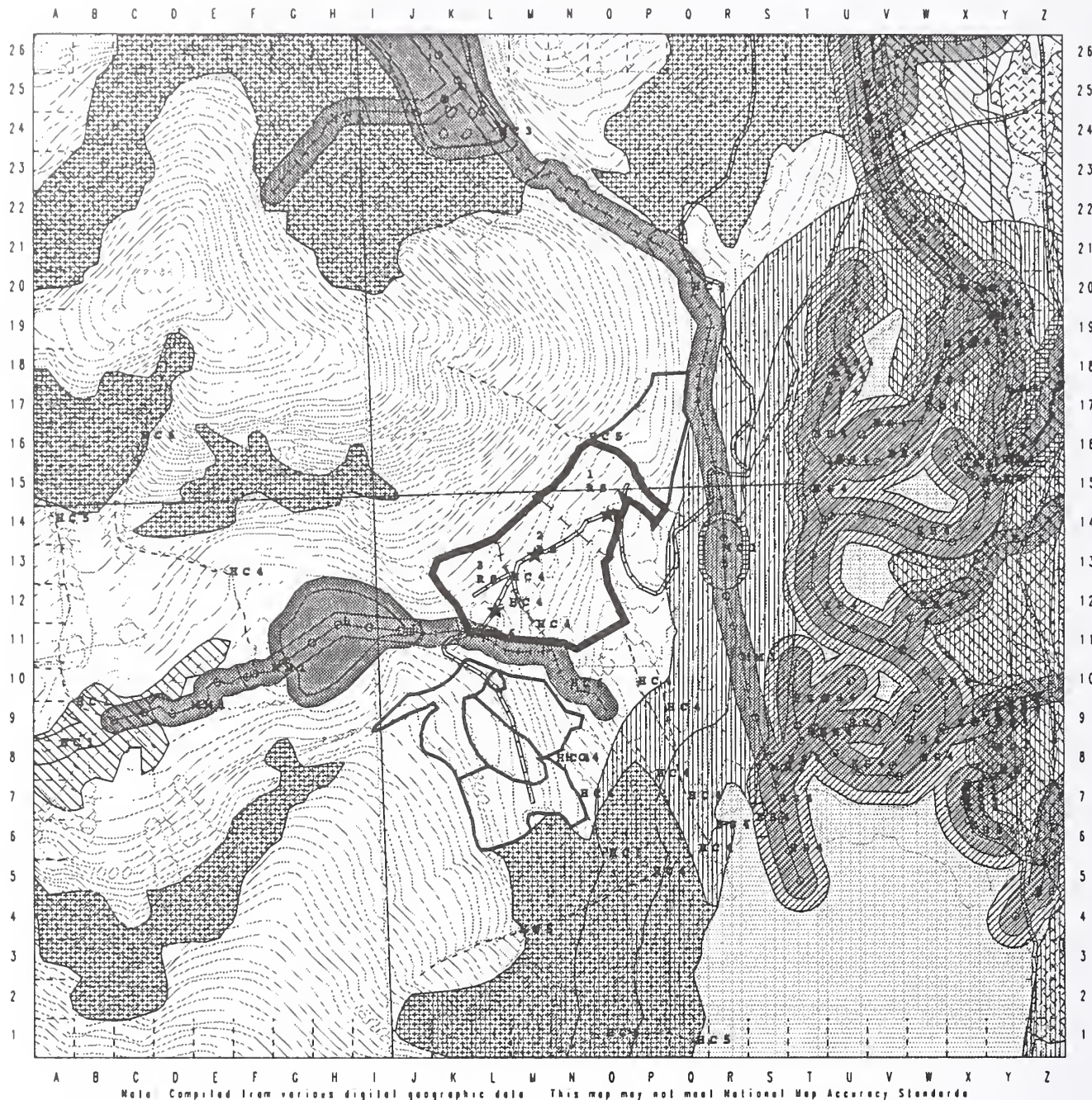
V-notch within harvest unit. See Soils Input. NRB 8/9/95

SILVICULTURE

Plant 10 acres. Monitor regeneration in wetlands. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1000 DEIS# 1

Mapscale 1:15840 (4 inch 1a Mile)
Created 11-4-95, /s08/staff/uc/draftcurd/4c1995.unl



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Road | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Setting Line | | Body of Water |
| | Other UC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index 4 Soil |

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 27.9
Volc 5 - 4.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 39
Potential MBF - 982.4
Quarter Quad - KTNCSHE
VCU Number - 744
Photo Number - 1890-2
Alternative Pattern - 020000
★ Landing



Eagle Nest

Foot
0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 2 Planned Acres: 55.1 Estimated Volume: 1,737.3 In Alternatives: 0, 0, 4, 0
Silvicultural System: Clearcut Settings: 3 Quad: KTNC4NW Photo: 1890-49 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1001 Original LSTA Unit: 744-374

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 44.5 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 0.0 Class 5: 34.5 Class 6: 10.1 Class 7: 0.0 Low Productive 10.6
Archeology 0-100: 0.0 100-200: 0.0 Seen 55.1 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 3.2 Medium 51.9 High 0.0 Very High 0.0 Wetland 55.1 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 72%

Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Upper (P-17 thru N-11) and lower (K-11) parts of this unit consist of forested wetlands (BMP 12.5). Recommend at least partial log suspension on these wetlands when yarded (BMP 13.9). NRB 11/14/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. The Western portion of the unit maybe suitable for Live Skyline. The Eastern portion of the unit may require additional roading to get above a small bench that occurs along M10-11. Confirm feasibility of Full suspension across Class III stream that flows through the Northern portion of the unit.

ENGINEERING INPUT

Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7) Road construction must minimize landslide potential.

FISH/WATERSHED INPUT

There is one water quality stream located in the northern part of this unit. Recommend that yarding be split on this stream and that full suspension be maintained when yarding across the stream (BMP 13.9).

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit is visible from Carroll Inlet. Adopted VQO is modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

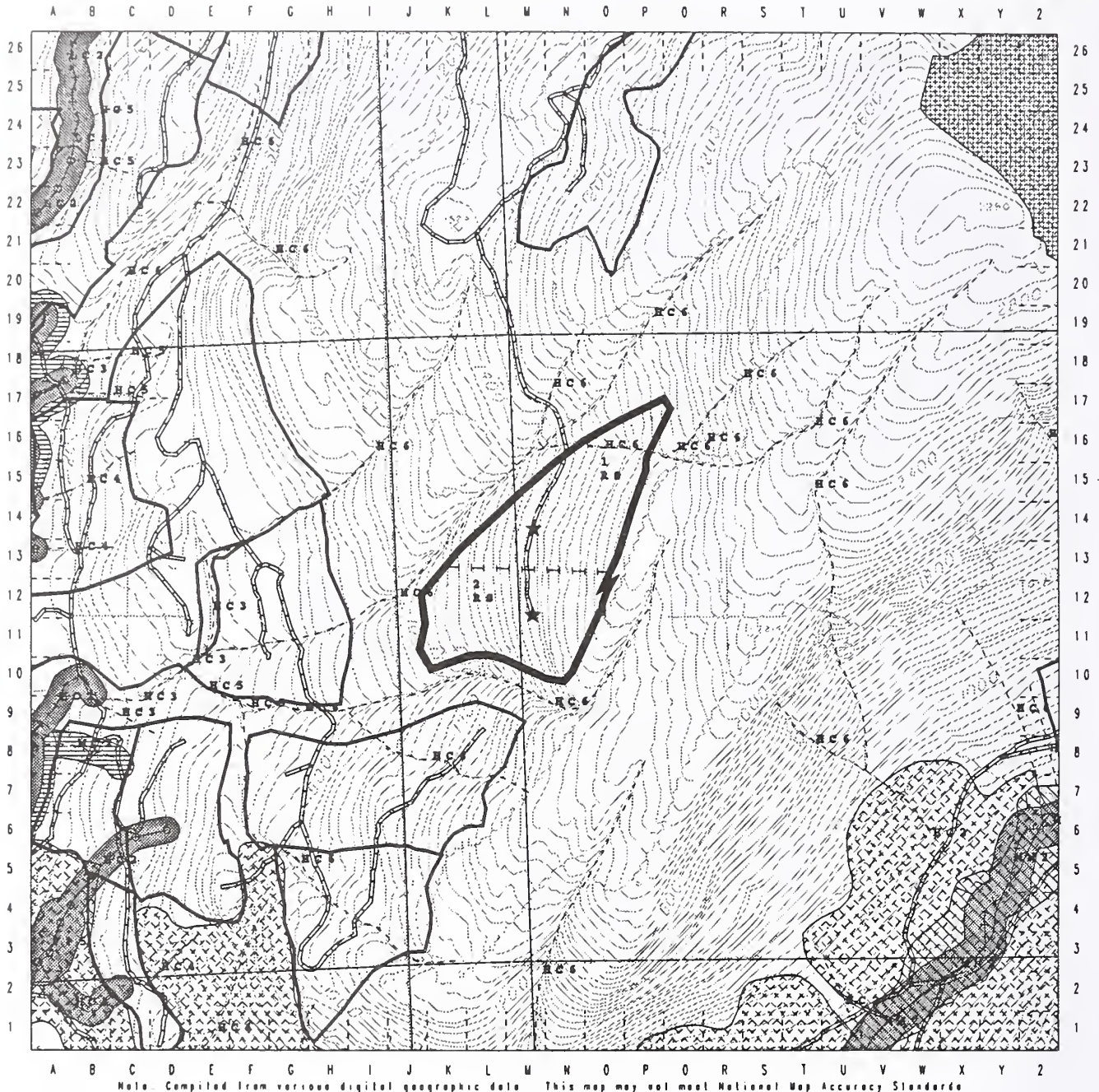
No concerns. NRB 11/14/95

SILVICULTURE

Unit has moderate volume with relatively steep slopes. Natural regeneration with moitoring of disturbance. CBG 11/15/95

Upper Carroll Study Area Unit Schematic - Unit 1001 DEIS# 2

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stall/ac/draftcurd/dcl095 eml



Class 1 Stream



Section Line



Planning Roads



Unit Boundary



Setting Line



other UC DEIS Unit Boundary



Contour or Ortho Line



Beech or Estuary Buffer



Private Land



No cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index 4 Soil

Volc 4 - 0

Volc 5 - 34.5

Volc 6 - 10.1

Volc 7 - 0

Total Acres - 55.1

Potential MBF - 1737.3

Quarter Quad - KTHC4NW

VCU Number - 744

Photo Number - 1890-49

Alternative Pattern - 000400

* Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Slack Line

SH Shovel Yarding

Projection - Stateplane



Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 3 Planned Acres: 57.7 Estimated Volume: 2,601.7 In Alternatives: 0, 3, 4, 5
 Silvicultural System: Clearcut Settings: 5 Quad: KTNC4NW Photo: 1890-51 Logging systems: HE RS
 Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 1002 Original LSTA Unit: 744-342

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 57.7 Nonforested 0.0 Aspect: NE
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 57.7 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 38.4 Not Seen 19.3 Primary VQO: M Recreation: SPNM
 Mass movement index: Low 0.0 Medium 9.3 High 48.4 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 34% Martin- 69% Otter- 0% Eagle- 0% Black Bear- 69%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Much of this unit is made up of high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial lof suspension when yarding (BMP 13.9). The lower road (K-14 to O-13) will require some full-bench construction across steep slopes (BMP 14.7). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Northwestern corner of planned unit appears to be a blindlead. Verify and convert to Helicopter yarding or defer entry at this time.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7)
 Oversteepened slopes may require full bench construction and endhaul of waste (BMP 14.7)

FISH/WATERSHED INPUT

The northern unit boundary is adjacent to a Class II stream and will require a 100 foot TTRA buffer. SPL 8/29/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Portion of unit may be visible from where Carroll Creek enters Carroll Inlet. Adopted VQO is modification. The beach/estuary buffer in conjunction with the uncut block of timber located along western edge of the unit will offer substantial screening. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No concerns. RL 9/30/95

GEOLOGICAL INPUT

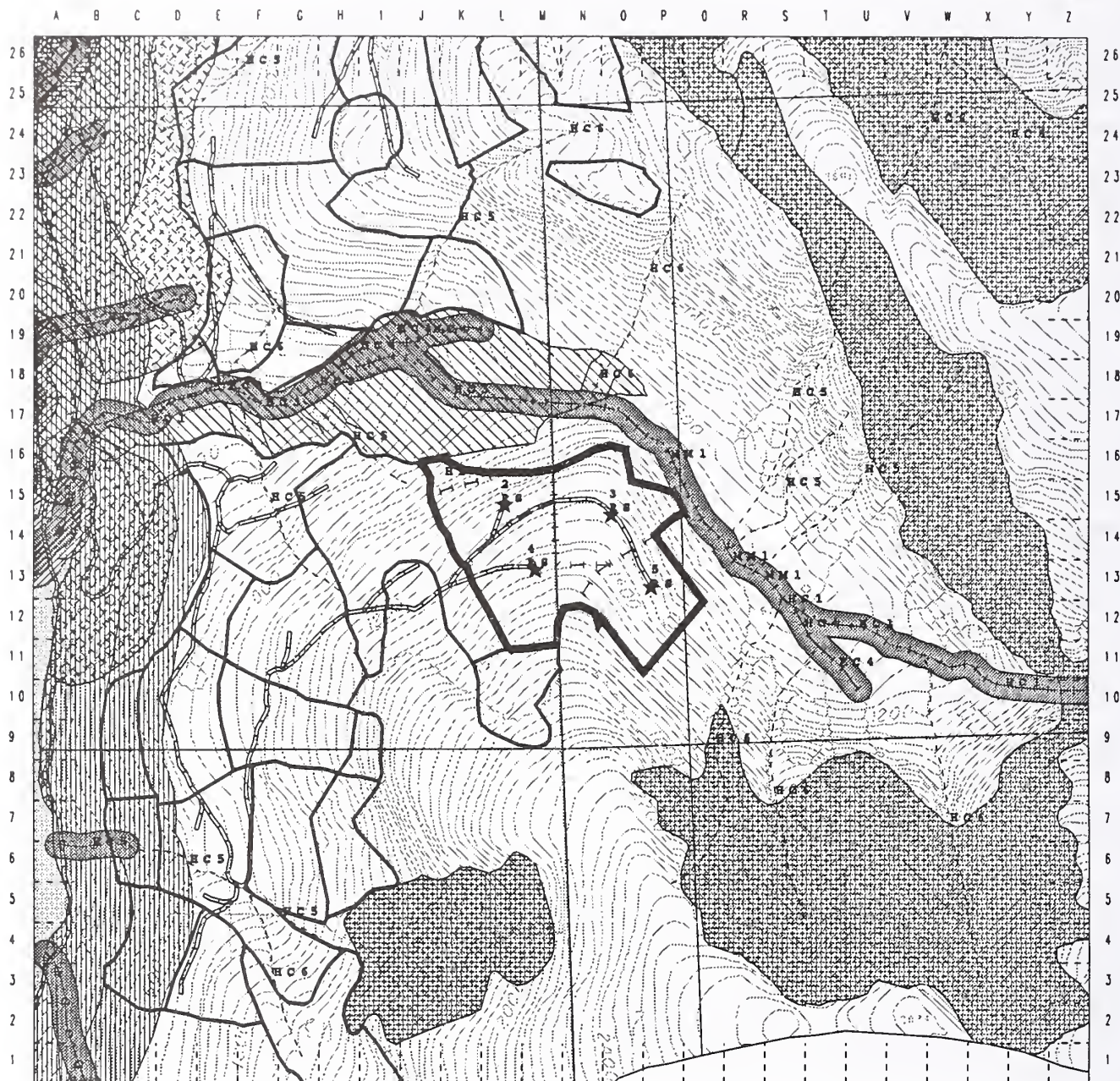
Unit is adjacent to a V-notch/avalanche tract (O-11 to Q-13). Recommend that an avalanche firm buffer of mature trees be left along the eastern unit boundary to protect regeneration. NRB 8/29/95

SILVICULTURE INPUT

Moderate productivity, with small areas of high elevation and high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (3 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1002 DEIS# 3

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/uc/draft/cdr/dcl095 omf



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream



Class 2 Stream



Class 3 Stream



Section Line



Planning Road



Unit Boundary



Setting Line



other UC DEIS Unit boundary
Contour or Ortho Line



Beach or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index 4 Soil

Volc 4 - 0

Volc 5 - 0

Volc 6 - 57.7

Volc 7 - 0

Total Acres - 57.7

Potential MRF - 2601.7

Quarter Quad - KTHC4NW

VCU Number - 744

Photo Number - 1890-51

Alternative Pattern - 003450

★ Landing



Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Slack Line

SH Shovel Yarding

Projection - Stateplane

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 4 Planned Acres: 81.1 Estimated Volume: 2,494.8 In Alternatives: 0, 0, 0, 5
Silvicultural System : Clearcut Settings: 10 Quad: KTNC5NE Photo: 1890-6 Logging systems: RS SH SL
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1003 Original LSTA Unit: 744-499

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 61.4 Spruce 0.0 Mixed Hem/Spr 7.7 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 11.1 Class 5: 50.3 Class 6: 7.7 Class 7: 0.0 Low Productive 12.0
Archeology 0-100: 0.0 100-200: 2.2 Seen 0.0 Not Seen 81.1 Primary VQO: MM Recreation: SPNM
Mass movement index: Low 17.8 Medium 0.0 High 63.2 Very High 0.0 Wetland 81.1 Mix Wetland 0.0
% of High Value Habitat: Deer- 49% Martin- 49% Otter- 0% Eagle- 0% Black Bear- 49%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The south end of this harvest unit is made up of forested wetlands, with some small open muskegs (BMP 12.5). Areas along the planned road are suitable for shovel yarding (BMP 13.9). Recommend at least partial log suspension when yarding the rest of these wetlands (BMP 13.9). Road construction should avoid areas of open muskeg (BMP 14.2). The north central part of the unit contains a small area, about 5 acres, of high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension when this setting is yarded (BMP 13.9). Road construction should avoid these steep slopes (BMP 14.7). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline, Shovel, and Slackline Yarding. A profile/logging systems analysis will establish unit boundary on the eastern portion of the Slackline setting where a slope break was identified. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

The southwest unit boundary is adjacent to a TTRA Class I stream and will have to be located at least 100 feet outside of the floodplain. The unit is also adjacent to four Class I and two Class II streams. All of these streams will require 100 foot TTRA buffers (BMPs 12.6, 12.6a, 13.16). Roads should be located outside of the floodplain if possible and any stream crossings should allow for adequate fish passage (BMP 14.17). Construction of all stream crossings will be subject to fish timing restrictions (BMPs 14.6, 14.14). SPL 1/3/95 NRB 8/29/95
Due to temperature sensitivity concerns, all trees less than 12 inches DBH within 35 feet of class III streams will remain standing, or a windfirm buffer will be delineated.

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No concerns. RL 9/30/95

GEOLOGICAL INPUT

Unit is located next to a major floodplain. Unit layout and road location should avoid this floodplain if possible (BMP 12.4). If roads must cross the floodplain, select the narrowest, most stable crossing available and provide adequate cross-drains for any overflow, backwater channels (BMP 14.2). NRB 8/29/95

SILVICULTURE INPUT

Moderate productivity, with small areas of Hydric soils that will need to be planted. (10 acres) CBG 10/16/95
Prescription should address partial cut stream buffer.

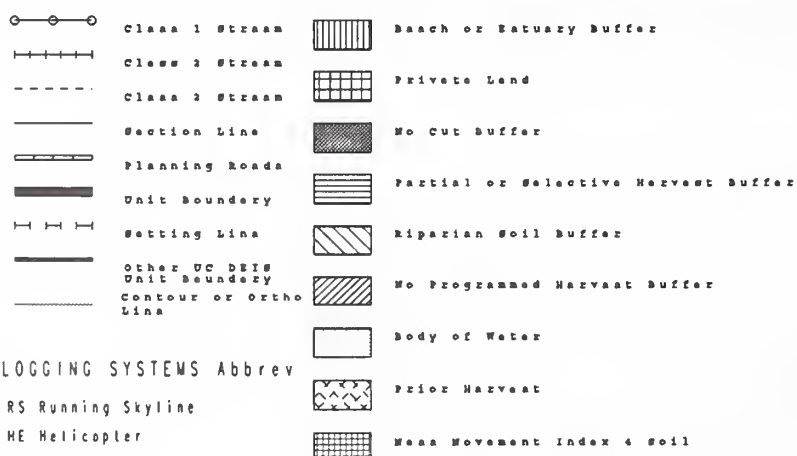
Mopscle 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/uc/druftcurd/dcl095 eml



A B C D E F G H I J K L M N O P O R S T U V W X Y Z



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Volc 4 - 11.1
Volc 5 - 50.3
Volc 6 - 7.7
Volc 7 - 0
Total Acres - 81.1
Potential MBF - 2494.8
Quarter Quad - XTNC5NE
VCU Number - 744
Photo Number - 1890-6
Alternative Pattern - 000050
★ Lending

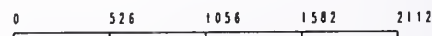
RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Slopeplane



Eagle Nest

Feet



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 5 Planned Acres: 97.5 Estimated Volume: 1,804.7 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Clearcut Settings: 10 Quad: KTNC5NE Photo: 1890-6 Logging systems: LS RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1004 Original LSTA Unit: 744-498

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 42.0 Spruce 0.0 Mixed Hem/Spr 0.7 Nonforested 0.0 Aspect: SE
 Volume class breakdown: Class 4: 22.8 Class 5: 19.2 Class 6: 0.7 Class 7: 0.0 Low Productive 54.8
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 97.5 Primary VQO: MM Recreation: Pl
 Mass movement index: Low 81.1 Medium 0.0 High 16.4 Very High 0.0 Wetland 97.5 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The north central part of the unit (M,N-15) contains an area of high landslide potential, MMI=3 (BMP 13.5). The north (K-16, L-15) parts and the south end of the unit (N-9) includes some forested wetlands (BMP 12.5). Recommend at least partial log suspension when yarding these areas (BMP 13.9). NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Live Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils in some areas. Road construction must minimize landslide potential. (BMP 14.7)
 Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit contains two Class III streams in the northwest portion of the unit. Recommend that yarding be split on these streams, and that trees be felled away from stream. This unit is also adjacent to one class III stream along the northern boundary. Variable slope break buffer may be required in this area.
 Due to temperature sensitivity concerns, all trees less than 12 inches DBH within 35 feet of class III streams will remain standing, or a windfirm buffer will be delineated.

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/30/95

SILVICULTURE INPUT

Moderate productivity, with small areas of Hydric soils that will need to be planted. (15 acres) CBG 10/16/95
 Prescription should address partial cut stream buffer.

Upper Carroll Study Area Unit Schematic - Unit 1004 DEIS# 5

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/slot1/uc/draftcard/dc1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary Contour or Ortho Line		Prior Harvest
			Mass Movement Index & Soil

Volc 4 - 22.8
Volc 5 - 19.2
Volc 6 - 0.7
Volc 7 - 0
Total Acres - 97.5
Potential M8F - 1804.7
Quarter Oad - KTNCSNE
VCU Number - 744
Photo Number - 1890-6
Alternative Pattern - 020050
★ Landing

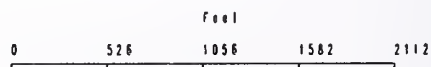
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 6 Planned Acres: 43.8 Estimated Volume: 1,133.9 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Clearcut Settings: 4 Quad: KTNC5NE Photo: 1890-7 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1005 Original LSTA Unit: 744-480

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 39.5 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 38.3 Class 5: 1.3 Class 6: 0.0 Class 7: 0.0 Low Productive 4.3
 Archeology 0-100: 0.0 100-200: 0.0 Seen 1.0 Not Seen 42.8 Primary VQO: MM Recreation: Pl
 Mass movement index: Low 12.1 Medium 0.0 High 31.7 Very High 0.0 Wetland 43.8 Mix Wetland 0.0
 % of High Value Habitat: Deer- 91% Martin- 91% Otter- 0% Eagle- 0% Black Bear- 91%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

High landslide potential soils are in the north (N-15) and east (O-13) parts of the unit (BMP 13.9). Much of the rest of the unit consists of low volume stands on forested wetlands, and small muskeg openings (BMP 12.5). Recommend at least partial log suspension when yarded (BMP 13.9). Recommend that road location avoids open muskegs (BMP 14.2). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Access road into unit should be located as far uphill as possible to take advantage of flats between slope breaks.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7) Road should avoid open muskegs where possible. (BMP 14.2)

FISH/WATERSHED INPUT

Unit contains a water quality stream (N-14 to L-12) (BMP 12.6). Recommend that yarding be split on this stream, and that trees be felled away from the stream. (BMP 13.9, 13.16). NRB 8/31/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

Moderately productive, with small areas of Hydric soils that will need to be planted. (8 acres)
 Monitor regeneration on hydric soils. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1005 DEIS# 6

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/uc/draftcard/4c1895.dml



	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index & Soil

Volc 4 - 38.3
Volc 5 - 1.3
Volc 6 - 0
Volc 7 - 0
Total Acres - 43.8
Potential WBF - 1133.9
Quarter Quad - K1HC5NE
VCU Number - 744
Photo Number - 1890-7
Alternative Pattern - 020050
* Landing

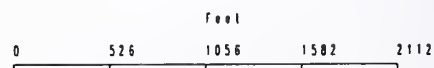
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SM Shovel Yarding

Projection - Spheroid



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 7 Planned Acres: 36.4 Estimated Volume: 1,178.5 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1890-8 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1006 Original LSTA Unit: 744-479

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 35.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 6.5 Class 5: 28.6 Class 6: 0.0 Class 7: 0.0 Low Productive 1.2
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 36.4 Primary VQO: MM Recreation: Pl
 Mass movement index: Low 0.1 Medium 0.0 High 36.3 Very High 0.0 Wetland 36.4 Mix Wetland 0.0
 % of High Value Habitat: Deer- 55% Martin- 55% Otter- 0% Eagle- 0% Black Bear- 55%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit made up of high landslide potential, MMI=3, soils, bordering on very high, MMI=4 (BMP 13.5). Recommend full log suspension when yarding this unit (BMP 13.9). Low-productivity, sub-alpine, mountain hemlock and mixed conifer series site. Includes some forested wetlands (BMP 12.5). Potential for snow damage to regeneration and slow growth in severe climate. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

Unit contains a water quality stream (N-12) (BMP 12.6). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

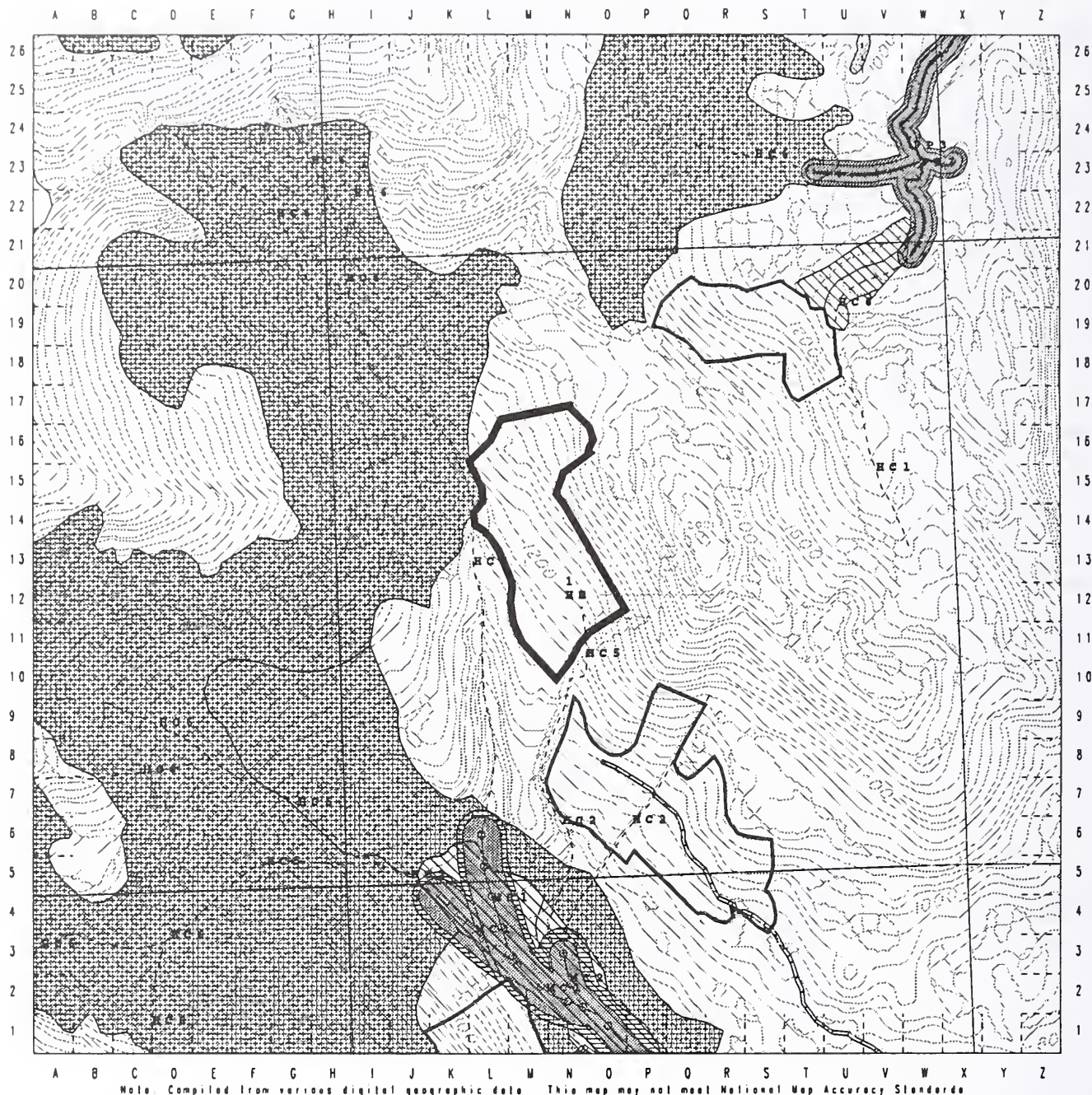
No concerns. NRB 8/31/95

SILVICULTURE INPUT

Moderately productive with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1006 DEIS# 7

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draftcard/dc1095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 6.5
Volc 5 - 28.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 36.4
Potential M8F - 1178.5
Overlaid Quad - KTHCSNE
VCU Number - 744
Photo Number - 1890-8
Alternative Pattern - 020050
★ Landing



Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 8 Planned Acres: 91.9 Estimated Volume: 3,172.9 In Alternatives: 2, 3, 4, 5
 Silvicultural System: Clearcut Settings: 9 Quad: KTNC5NE Photo: 1890-4 Logging systems: HE RS SH
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1007 Original LSTA Unit: 744-381

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 59.5 Spruce 0.0 Mixed Hem/Spr 32.3 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 91.9 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 1.9 Seen 72.1 Not Seen 19.8 Primary VQO: M Recreation: RM
 Mass movement index: Low 56.0 Medium 12.8 High 23.1 Very High 0.0 Wetland 12.8 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martln- 100% Otter- 21% Eagle- 21% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The south part of this unit contains forested wetlands (BMP 12.5). Recommend at least partial log suspension be achieved in yarding (BMP 13.9) to minimize wetland disturbance. Recommend overlay road construction with adequate cross drains where feasible on these wetlands (BMPs 14.2, 14.3) NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline, Shovel, Live Skyline, and Helicopter.. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)
 Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

The southern unit boundary is adjacent to a Class II stream and will require a minimum 100 foot buffer (BMP 12.6a). Two water quality streams are located in the north part of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained (BMP 13.9), trees be felled away from the stream-course and slash be removed (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Portion of unit is visible from Carroll Inlet. Identified visual quality objective is modification. Adjacent uncut standing timber will help to screen this unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

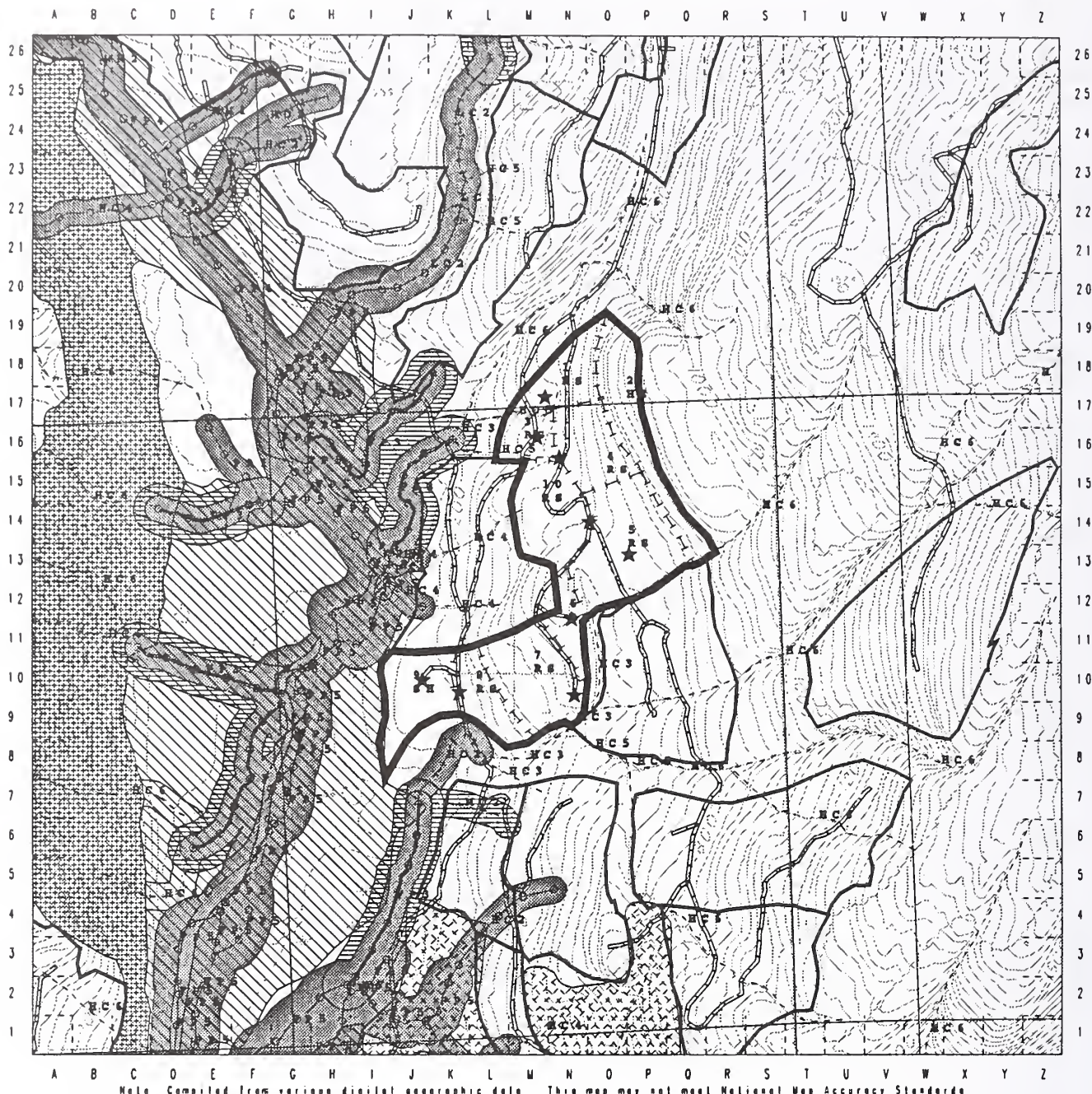
No concerns. NRB 9/18/95

SILVICULTURE INPUT

This unit has moderate volume, with small areas of Hydric soils that will need to be planted. (13 acres)
 Monitor regeneration on hydric soils. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1007 DEIS# 8

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /w06/staff/uc/drillcard/dci1095.mtl



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Roads | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Settling Line | | Body of Water |
| | Other UC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index 4 Soil |

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 0
Volc 5 - 91.9
Volc 6 - 0
Volc 7 - 0
Total Acres - 91.9
Potential MBF - 3172.8
Quarter Oad - KINCSHE
VCU Number - 744
Photo Number - 1890-4
Alternative Pattern - 023450
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 9 Planned Acres: 92.9 Estimated Volume: 2,677.7 In Alternatives: 2, 3, 4, 5
 Silvicultural System: Clearcut Settings: 12 Quad: KTNC4NW Photo: 1890-47 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1008 Original LSTA Unit: 744-389

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 92.9 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
 Volume class breakdown: Class 4: 75.4 Class 5: 17.5 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 92.9 Primary VQO: MM Recreation: P1
 Mass movement index: Low 0.0 Medium 0.0 High 92.9 Very High 0.0 Wetland 0.0 Mix Wetland 32.1
 % of High Value Habitat: Deer- 64% Martin- 86% Otter- 0% Eagle- 0% Black Bear- 86%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Lower part of the unit consists of high landslide potential soils, MMI=3 (BMP 13.5). Upper part of unit is mainly forested wetlands (BMP 12.5). Recommend at least partial log suspension be achieved when yarding these areas (BMP 13.9). Road locations should avoid wetlands, if possible (BMP 14.3). Road construction on high landslide potential soils may require full bench design (BMP 14.7). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Field reconnaissance shows that the south 1/2 of the unit is unfeasible for roading and harvest. Recommend reducing unit boundary to first major slope break @ H12 to R13. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit is adjacent to Class II habitat (BMP 12.6) and will require a 100 foot AHMU buffer (BMP 12.6a). This reach of Class II habitat is very complex and highly productive. Buffers in excess of 100 feet may be necessary to insure protection. The biologists will work with the engineers to design the access road as far from the main channel as possible (BMP 14.3). SPL 1/3/95 At least four water quality streams are located in this unit (M-13 to 15, O-14 to 15, P-12 to 15, R-13 to Q-15) (BMP 12.6a). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

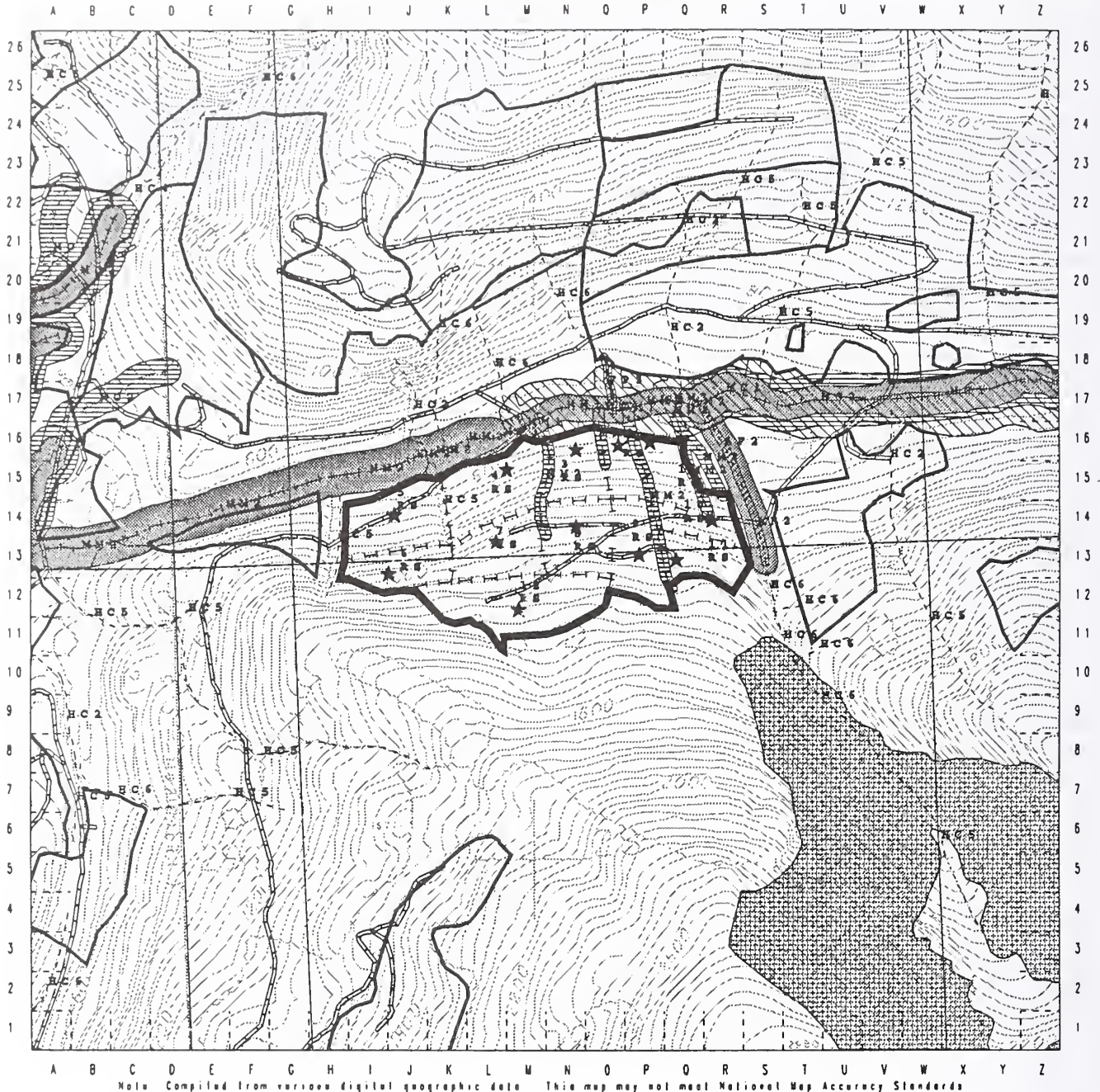
No concerns. NRB 9/21/95

SILVICULTURE INPUT

Moderately productive with small areas of Hydric soils as well as areas of high mass movement potential. Planting will be needed on 23 acres. Prescription should address partial cut stream buffer. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1000 DEIS# 9

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s00/stell/sc/draftcard/dc1095 uml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other DC DEIS Unit boundary contour or Ortho Line		Prior Harvest
			Mass Movement Index 4 Soil

Volc 4 - 75.4
Volc 5 - 17.5
Volc 6 - 0
Volc 7 - 0
Total Acres - 82.9
Potential MBF - 2677.7
Quarter Quad - K1NC4NW
VCU Number - 744
Photo Number - 1890-47
Alternative Pattern - 023450
★ Logging

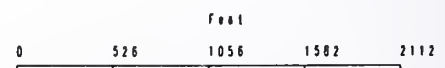
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 10 Planned Acres: 30.5 Estimated Volume: 645.5 In Alternatives: 0, 3, 4, 5
 Silvicultural System: Clearcut Settings: 5 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
 Mgt Area: K35 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 1009 Original LSTA Unit: 746-768

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 15.0 Spruce 0.0 Mixed Hem/Spr 4.5 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 10.9 Class 5: 6.7 Class 6: 0.0 Class 7: 0.0 Low Productive 11.0
 Archeology 0-100: 0.0 100-200: 0.2 Seen 8.4 Not Seen 22.1 Primary VQO: MM Recreation: RM
 Mass movement index: Low 8.3 Medium 22.2 High 0.0 Very High 0.0 Wetland 8.3 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Harvest unit consists almost entirely of mixed wetland and upland soils. Supports open bog sedge meadows and low volume mixed conifer stands. Most of unit is suitable for shovel logging (BMP 13.9). NRB 8/9/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Field reconnaissance indicated <8000 bf/acre which is economically unfeasible to build road and harvest.

ENGINEERING INPUT

Coho/Pink/Chum timing (June 15 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is adjacent to a Class I stream and will require a 100 foot TTRA buffer (BMP 12.6)

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Small portion of unit may be visible from Carroll Inlet. Identified VQO is maximum modification. Beach buffer will screen unit. WEA 9/30/95

LANDS INPUT

This harvest unit is located within the vicinity of the Swan Lake power transmission line. Logging operations should be conducted so as not to disrupt this facility and it's functions. When rigging logging equipment in this area be sure to stay clear of power lines. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

Carbonate rock formations are found in the North Saddle Lakes area. They may occur within the proposed harvest unit. If carbonate rock and karst features are found within the unit, consult the Area geologist. NRB 8/9/95

SILVICULTURE INPUT

Moderately productive with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/16/95
 Planned unit boundary may overlap existing second growth. Verify.

Upper Carroll Study Area Unit Schematic - Unit 1009 DEIS# 10

Mopscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/vc/drallicord/6c1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index & Soil

Volc 4 - 10.9
Volc 5 - 6.7
Volc 6 - 0
Volc 7 - 0
Total Acres - 30.5
Potential M87 - 645.5
Quarter Oad - KINCSE
VCU Number - 746
Photo Number - 1390-23
Alternative Pattern - 003450
★ Landing



Eagle Nest



Projection - Sphericon

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 11 Planned Acres: 29.9 Estimated Volume: 1,059.4 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Clearcut Settings: 5 Quad: KTNC5NE Photo: 1890-6 Logging systems: LS RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1010 Original LSTA Unit: 744-489

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 24.3 Spruce 0.0 Mixed Hem/Spr 5.6 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 4.5 Class 5: 19.8 Class 6: 5.6 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 29.9 Primary VQO: MM Recreation: P1
 Mass movement index: Low 0.0 Medium 0.0 High 29.9 Very High 0.0 Wetland 4.3 Mix Wetland 25.5
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

South part of unit (M,N-11), about 8 acres, is mixture of forested wetlands and muskeg (BMP12.5). This part of the unit is suitable for shovel logging (BMP 13.9). Entire unit has low to medium landslide potential, MMI=1 or 2. No mitigation measures required for logging or road construction. South end of unit is located near along riparian/floodplain area (L-11 to N-10). Unit layout should not include these alluvial soils (BMPs 12.4 and 12.6).
 NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Live Skyline. Confirm final road and landing locations. Road should be located close to south knob as possible.

ENGINEERING INPUT

Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is bordered by Class I habitat to the east and Class II habitat to the north (BMP 12.6). These streams will require 100 foot TTRA buffers (BMP 12.6a).

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/10/95

SILVICULTURE INPUT

High productivity with small areas of Hydric soils as well as areas of high mass movement potential. Plant 6 acres.
 CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1010 DEIS# 11

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/staff/ec/draftcard/ec1095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Betula Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index & Soil

LOGGING SYSTEMS Abbrev

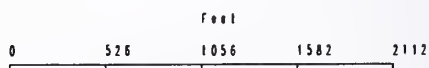
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 4.5
Volc 5 - 19.8
Volc 6 - 5.6
Volc 7 - 0
Total Acres - 29.9
Potential MBF - 1059.4
Quarter Quad - K1NC5NE
VCU Number - 744
Photo Number - 1880-6
Alternative Pattern - 020050
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 12 Planned Acres: 38.3 Estimated Volume: 1,355.8 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1890-6 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1011 Original LSTA Unit: 744-489

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 35.1 Spruce 0.0 Mixed Hem/Spr 3.2 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 0.0 Class 5: 35.1 Class 6: 3.2 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 38.3 Primary VQO: MM Recreation: P1
 Mass movement index: Low 0.0 Medium 0.0 High 38.3 Very High 0.0 Wetland 38.3 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit is made up mostly of high landslide potential soils, MMI=3. Recommend at least partial log suspension be achieved on these soils (BMP 13.9). Slopes above the unit (K-16 to K-10) are MMI=4. Recommend that backline extend only to the 1100 foot elevation (BMP 13.5). Lower footslopes (M-16 to M-11) are classified as MMI=2 and require no special mitigation measures. NRB 8/10/95.

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

High mass movement index soils. Road construction must minimize landslide potential (BMP 14.7)

FISH/WATERSHED INPUT

Several water quality streams are located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a). NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

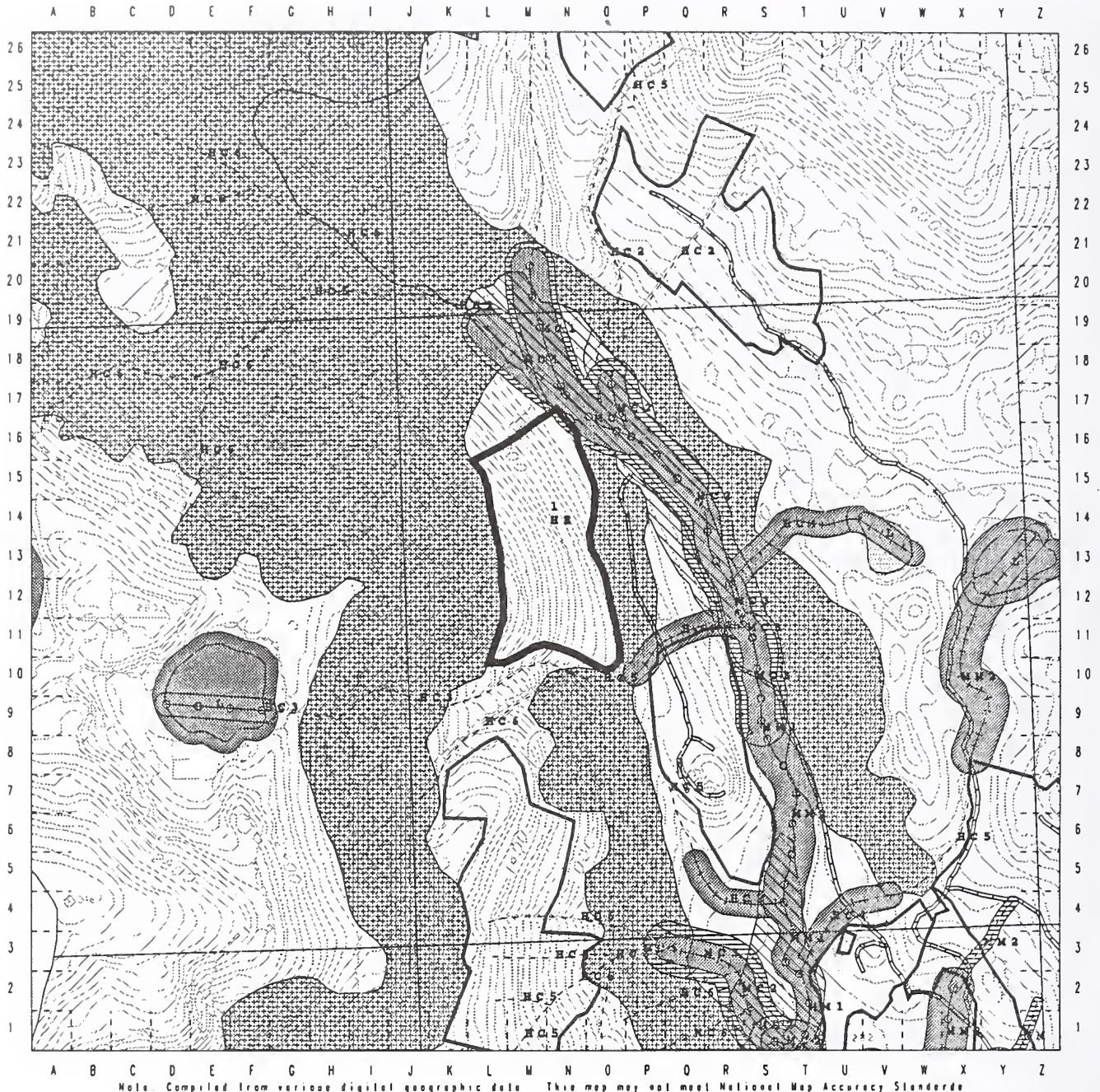
V-notch located along south unit boundary (K-10 to N-10). Provide windfirm buffer to protect the very steep and unstable sideslopes within the V-notch (BMP 12.6a, 13.5). NRB 8/10/95

SILVICULTURE INPUT

High productivity, apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1011 DEIS# 12

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/stall/uc/draft/cord/dc1095 eml



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water

Volc 4 - 0
Volc 5 - 35.1
Volc 6 - 3.2
Volc 7 - 0
Total Acres - 38.3
Potential M8F - 1355.8
Operator Quad - KTHCSNE
VCU Number - 744
Photo Number - 1890-6
Alternative Pattern - 020050
★ Landing

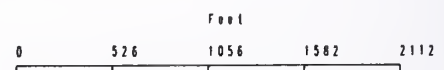
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 13 Planned Acres: 37.2 Estimated Volume: 1,657.6 In Alternatives: 2, 0, 0, 0
 Silvicultural System: Clearcut Settings: 4 Quad: KTND5SW Photo: 1790-36 Logging systems: RS
 Mgt Area: K32 VCU: 737 Watershed: BW8A WAA: 510 NOI Unit: 1012 Original LSTA Unit: 737-754

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 1.8 Spruce 0.0 Mixed Hem/Spr 35.4 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 1.8 Class 6: 35.4 Class 7: 0.0 Low Productive 0.1
 Archeology 0-100: 0.0 100-200: 0.0 Seen 31.6 Not Seen 5.6 Primary VQO: PR Recreation: RM
 Mass movement index: Low 1.5 Medium 19.2 High 16.5 Very High 0.0 Wetland 1.5 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Low to medium landslide potential, MMI=1 or 2 throughout the unit (BMP 13.5). No other concerns. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No fisheries concern in this unit. SPL 1/3/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions. Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

This unit is visible from Neets Bay. VQO objective is partial retention. Beach buffer will help to screen unit. LA/WL Bio/Forester should coordinate placement of wildlife island to meet multiple objectives.

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

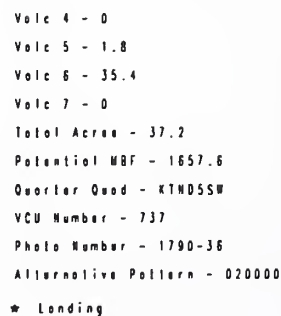
GEOLOGICAL INPUT

No concerns. NRB 8/10/95

SILVICULTURE INPUT

High productivity with good natural regeneration. No concerns. CBG 10/16/95

Mopscote 1:15840 (4 inch to Mile)
Created 11-4-95. /u05/projects/vc/draftcord/draftcord eml



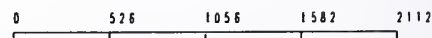
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplone



Eagle Nest

Foot



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 14 Planned Acres: 11.3 Estimated Volume: 390.4 In Alternatives: 2, 0, 0, 0
 Silvicultural System: Shelterwood Settings: 1 Quad: KTND5SW Photo: 1790-35 Logging systems: HE
 Mgt Area: K32 VCU: 737 Watershed: BW10 WAA: 510 NOI Unit: 1013 Original LSTA Unit: 737-732

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 11.3 Nonforested 0.0 Aspect: S
 Volume class breakdown: Class 4: 0.0 Class 5: 11.3 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 11.3 Not Seen 0.0 Primary VQO: PR Recreation: RM
 Mass movement index: Low 0.0 Medium 7.6 High 3.7 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

V-notch along south-east unit boundary. See Geologic Input. NRB 8/24/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter. Landline location required - State land selection along south and west boundaries.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

A water quality stream is located along the E unit boundary (BMP 12.6a). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 8/24/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit is visible from Neets Bay. Identified VQO is partial retention. Partial cutting will help mollify visual impact. WEA 9/30/95

LANDS INPUT

Unit is located uphill from SSRAA net pens in Neets Bay. SSRAA administrators should be advised when logging takes place. NRB 8/24/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

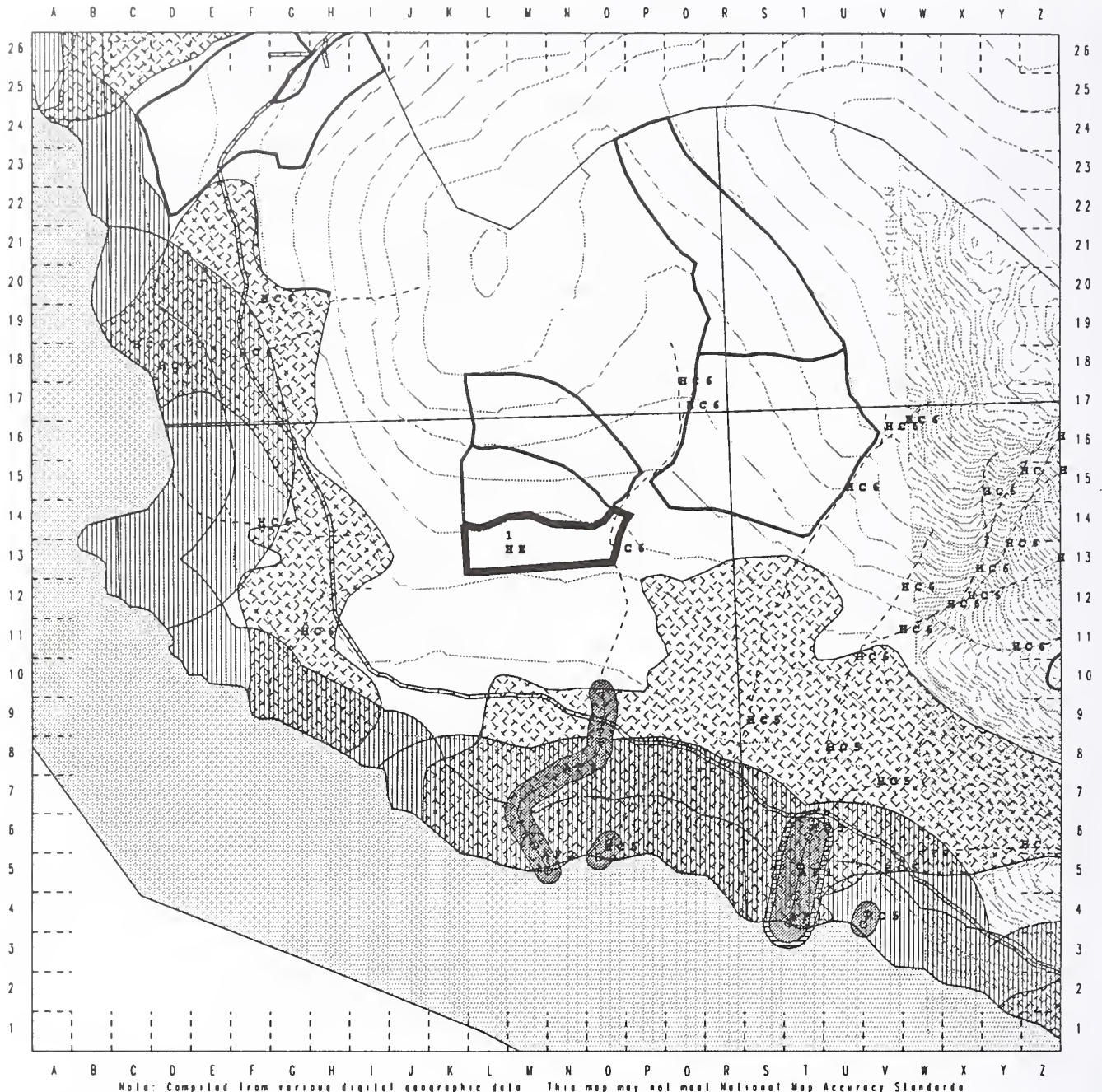
V-notch along south-east unit boundary (P-14 to P-12). Deep incision, steep unstable sideslopes. Recommend a wind-firm buffer be established along the west side of this V-notch (BMPs 12.6a, 13.5, 13.16). NRB 8/24/95

SILVICULTURE INPUT

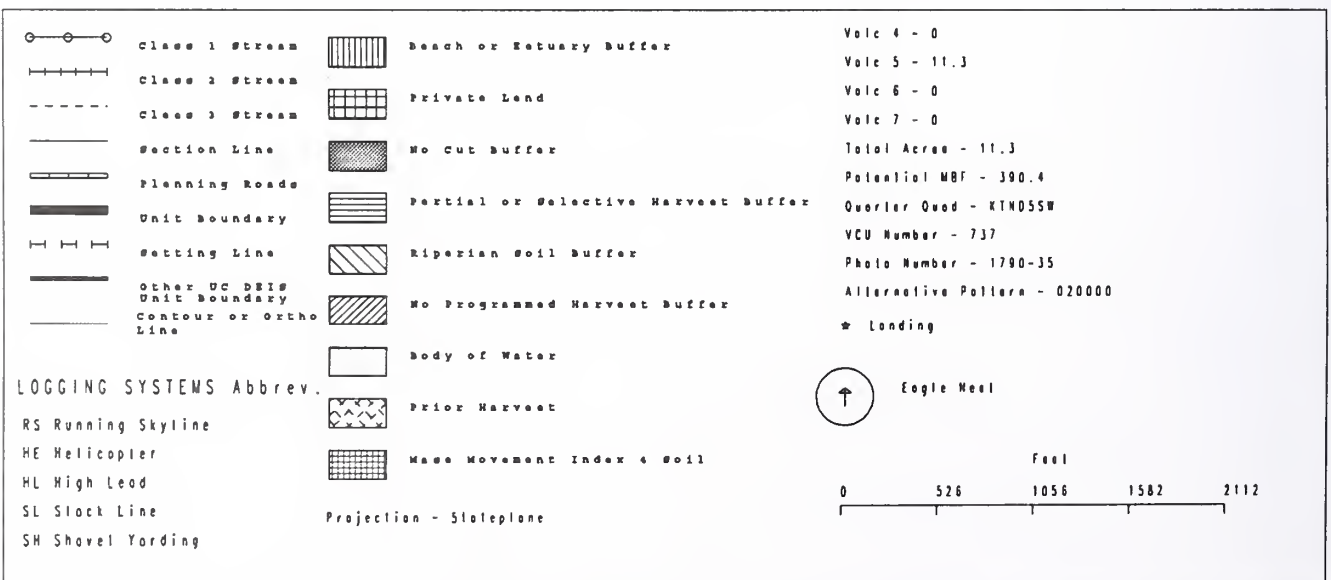
Moderate productivity with small areas of Hydric soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1013 DEIS# 14

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u05/projects/uc/draftcard/draftcard.sml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 15 Planned Acres: 33.6 Estimated Volume: 479.8 In Alternatives: 2, 0, 4, 5
Silvicultural System: Clearcut Settings: 2 Quad: KTND5SE Photo: 1890-11 Logging systems: RS
Mgt Area: K32 VCU: 734 Watershed: D69B WAA: 406 NOI Unit: 1014 Original LSTA Unit: 734-656

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 9.8 Spruce 0.0 Mixed Hem/Spr 0.1 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 9.8 Class 5: 0.1 Class 6: 0.0 Class 7: 0.0 Low Productive 23.8
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 33.6 Primary VQO: MM Recreation: Pl
Mass movement index: Low 19.7 Medium 0.0 High 13.9 Very High 0.0 Wetland 19.7 Mix Wetland 13.9
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

About 25 acres of this unit is made up of forested wetlands (BMP 12.5). South part (K,L-12) of unit is suitable for shovel logging (BMP 13.9). Recommend at least partial log suspension in yarding on the rest of these wetlands. NRB 8/24/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

Water quality stream along north unit boundary. Recommend green and white stream-course protection prescription (BMP 13.16). NRB 8/24/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

Visuals: No concerns; Recreation: potential access trail & trailhead to upper Orchard Creek.

LANDS INPUT

No concerns. NRB 8/24/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

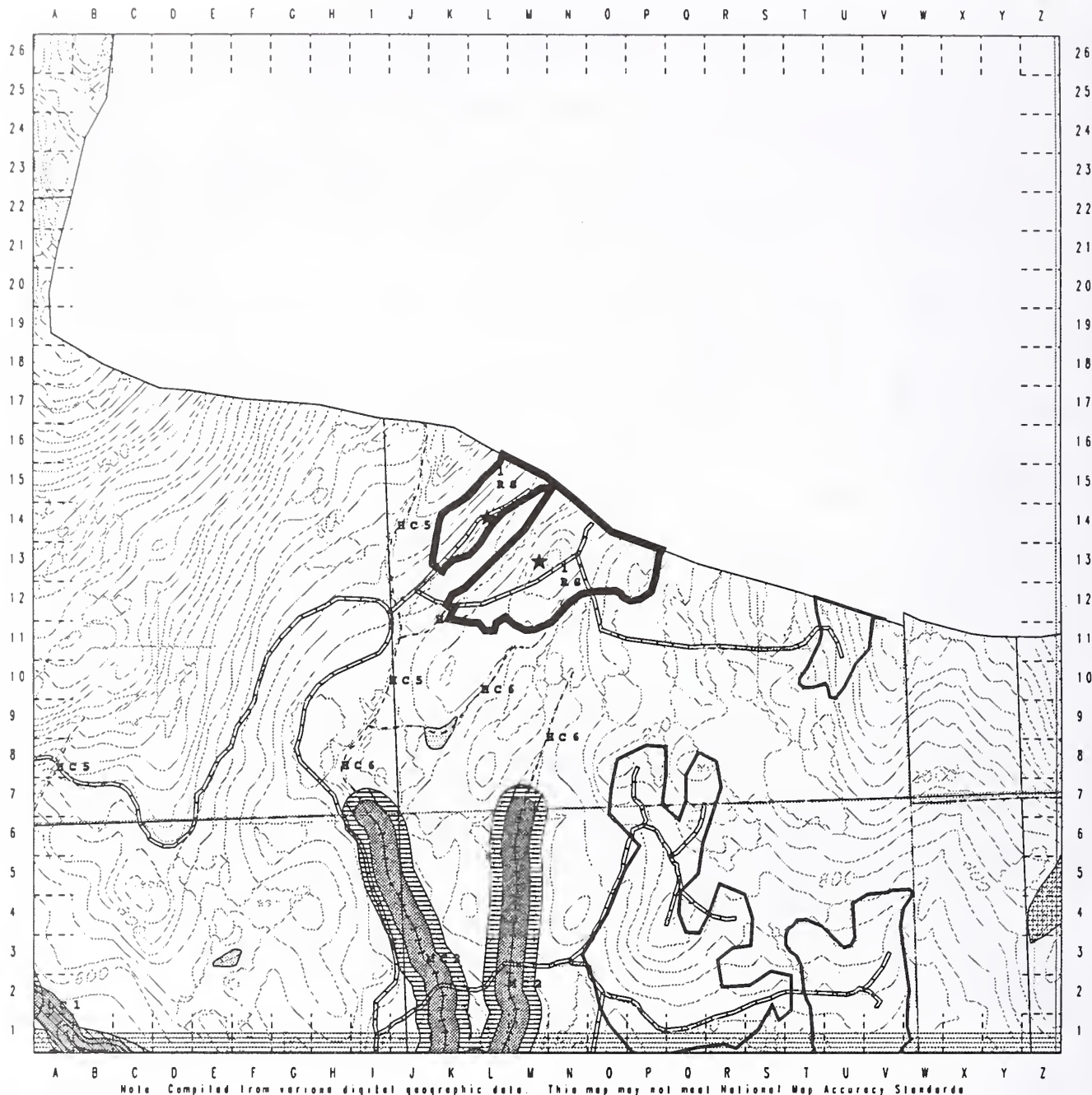
No concerns. NRB 8/24/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres). Monitor regeneration. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1014 DEIS# 15

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95. /u08/staff/uc/drillcard/dc1095.xml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Barren or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary Contour or Ortho Line		Prior Harvest
			Mass Movement Index & Soil

Volc 4 - 9.8
Volc 5 - 0.1
Volc 6 - 0
Volc 7 - 0
Total Acres - 33.6
Potential MBF - 479.8
Quarter Quad - KTH05SE
VCU Number - 734
Photo Number - 1890-12
Alternative Pattern - 020450
★ Landing

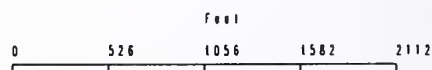
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 16 Planned Acres: 114.1 Estimated Volume: 2,995.2 In Alternatives: 2, 3, 4, 5
 Silvicultural System: Clearcut Settings: 10 Quad: KTNC4NW Photo: 1890-46 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1015 Original LSTA Unit: 744-417

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 57.8 Spruce 0.0 Mixed Hem/Spr 35.3 Nonforested 0.0 Aspect: S
 Volume class breakdown: Class 4: 57.6 Class 5: 35.5 Class 6: 0.0 Class 7: 0.0 Low Productive 21.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 114.1 Primary VQ0: MM Recreation: Pl
 Mass movement index: Low 11.1 Medium 39.8 High 63.2 Very High 0.0 Wetland 11.1 Mix Wetland 0.0
 % of High Value Habitat: Deer- 76% Martin- 76% Otter- 0% Eagle- 0% Black Bear- 76%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Upper slopes along the north edge of this unit (K-15 to M-15) include high landslide potential soils. MMI=3 (BMP 13.5). Recommend at least partial log suspension in yarding to minimize surface disturbance (BMP 13.9). Shallow soils on upper slopes are subject to windthrow. Recommend that partial cut silviculture systems not be used on these sites. Unit contains forested wetlands along footslope, southern unit boundary (H-12 to N-12) (BMP 12.5). Recommend at least partial suspension to protect wetland functions (BMP 13.9). NRB 8/24/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Field reconnaissance shows that northern most part of planned unit appears to be a blindlead past slope break if road location is not feasible.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
 Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

Several water quality streams are located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9). trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95 This unit is adjacent to highly productive Class II resident fish habitat and will require a minimum 100 foot AHMU no cut buffer. The biologist will work with the engineers to design the access road as far from the main channel as possible (BMPs 14.2, 14.3). Recommend that the south unit boundary not cross the road right of way (BMP 13.2). SJL 1/3/95
 Due to temperature sensitivity concerns, all trees less than 12 inches DBH within 35 feet of class III streams will remain standing, or a windfirm buffer will be delineated.

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/24/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

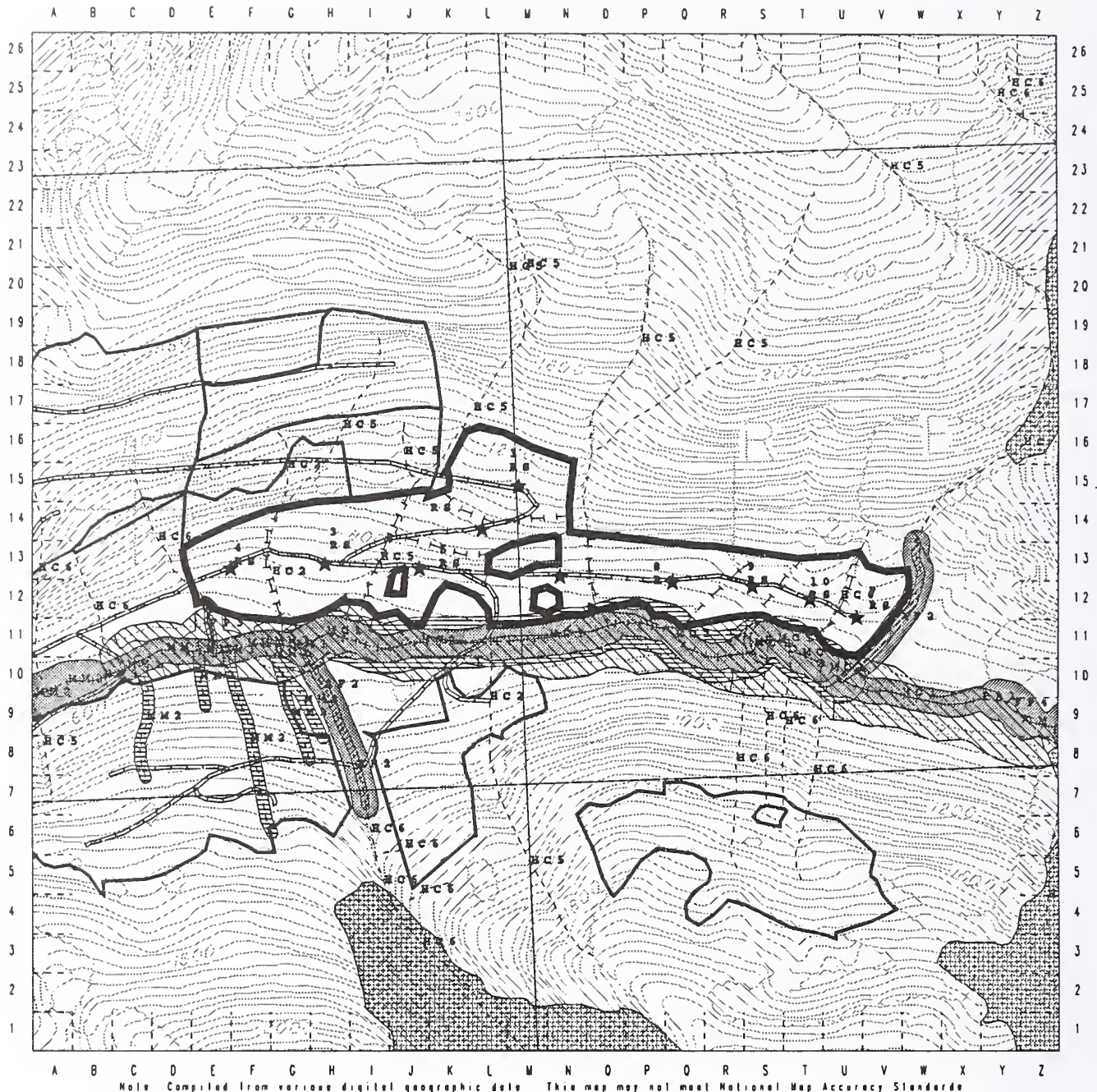
No concerns. NRB 8/24/95

SILVICULTURE INPUT

High productivity, monitor regeneration to determine if planting will be necessary. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1015 DEIS# 16

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/stell/uc/drillcard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Hattury Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary Contour or Ortho Line		Prior Harvest
			Mass Movement Index 4 Soil

Volc 4 - 57.6
Volc 5 - 35.5
Volc 6 - 0
Volc 7 - 0
Total Acres - 114.1
Potential MBR - 2995.2
Quarter Quad - KTHC4NW
VCU Number - 744
Photo Number - 1890-46
Alternative Posters - 023450
★ Landing

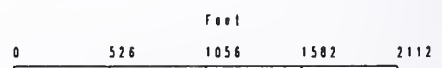
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 17 Planned Acres: 36.9 Estimated Volume: 1,162.0 In Alternatives: 2, 0, 0, 0
 Silvicultural System : Shelterwood Settings: 2 Quad: KTND5SE Photo: 1790-63 Logging systems: HE
 Mgt Area: K32 VCU: 737 Watershed: BW13 WAA: 510 NOI Unit: 1016 Original LSTA Unit: 737-639

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 36.4 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
 Volume class breakdown: Class 4: 14.1 Class 5: 22.3 Class 6: 0.0 Class 7: 0.0 Low Productive 0.5
 Archeology 0-100: 0.0 100-200: 0.0 Seen 36.9 Not Seen 0.0 Primary VQO: M Recreation: SPNM
 Mass movement index: Low 0.0 Medium 2.4 High 34.5 Very High 0.0 Wetland 24.1 Mix Wetland 0.0
 % of High Value Habitat: Deer- 54% Martin- 54% Otter- 0% Eagle- 0% Black Bear- 54%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit contains soils with a high potential for landslides (BMP 13.5). Unit also contains wetlands, some of it forested (BMP 12.5). Helicopter yarding prescribed for this unit will provide full log suspension and minimize the potential for surface disturbance (BMP 13.9). NRB 8/28/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter. Western most part of unit is adjacent to state land selection - land line survey required.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

Two water quality streams are located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). A slope break (AHMU) buffer is recommended for the stream flowing along the boundary (BMP 12.6a). SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit is visible from Neets Bay. Identified VQO is modification. Partial cutting will mollify visual impacts. WEA 9/30/95

LANDS INPUT

Unit is located above the SSRAA facilities at Neets Bay. SSRAA administrators should be advised when helicopter logging takes places overhead. NRB 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9.30/95

GEOLOGICAL INPUT

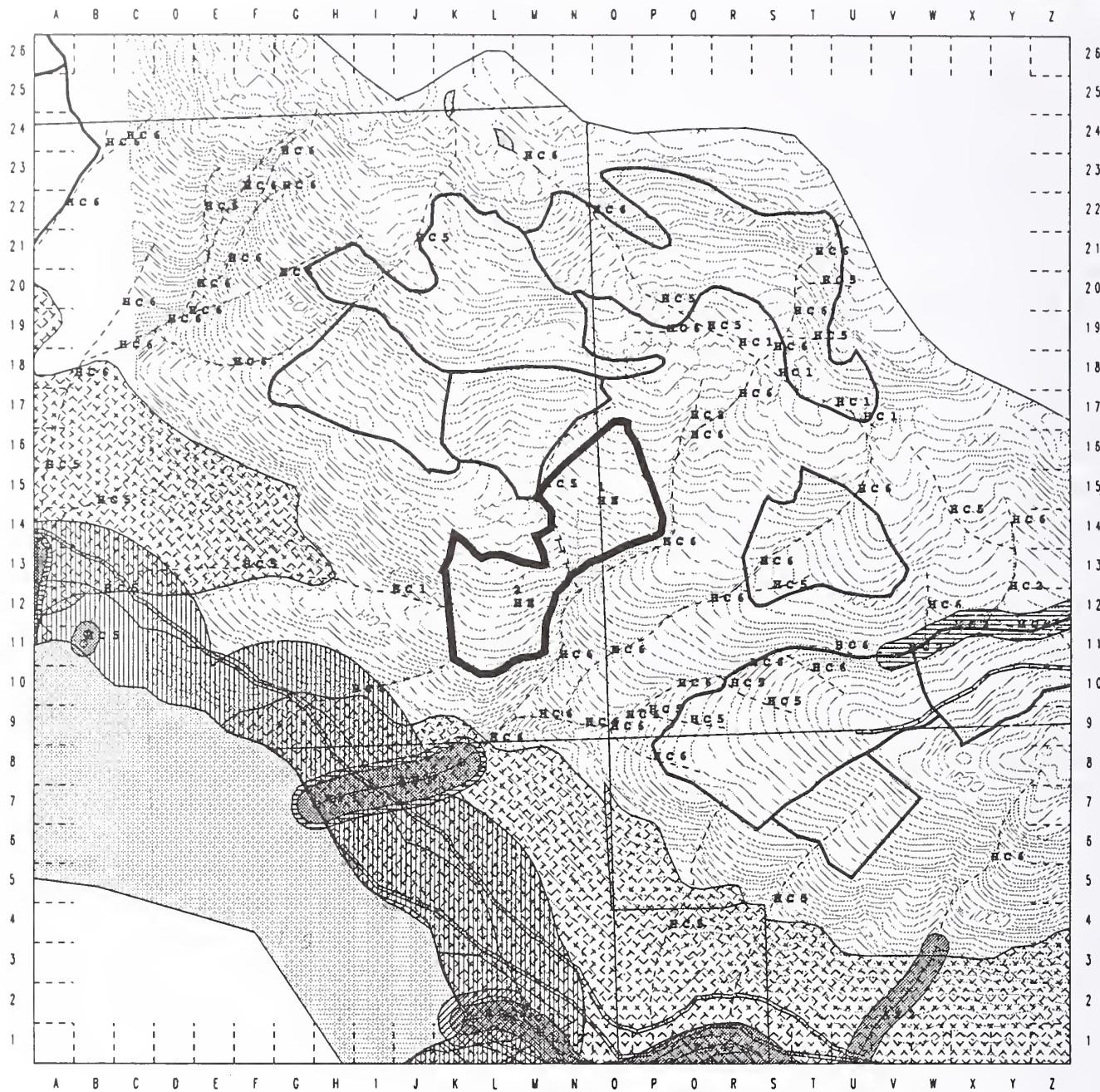
A V-notch is located along the south unit boundary (P-14 to M-10). See Fisheries/Watershed Input for recommendations. NRB 8/28/95

SILVICULTURE INPUT

Moderate productivity, with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1016 DEIS# 17

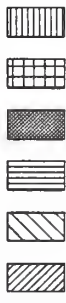
Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/sc/drillcard/dcl095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 14.1
Volc 5 - 22.3
Volc 6 - 0
Volc 7 - 0
Total Acres - 36.9
Potential MRF - 1162
Quarter Quad - KTH05SE
VCU Number - 737
Photo Number - 1790-63
Alternative Pattern - 020000
★ Landing

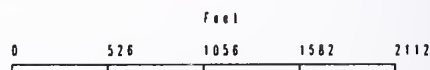
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slick Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 18 Planned Acres: 42.9 Estimated Volume: 1,259.7 In Alternatives: 2, 0, 0, 0
 Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-3 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 1017 Original LSTA Unit: 744-513

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 40.7 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 23.3 Class 5: 17.3 Class 6: 0.0 Class 7: 0.0 Low Productive 2.2
 Archeology 0-100: 0.0 100-200: 0.1 Seen 18.1 Not Seen 24.7 Primary VQO: MM Recreation: SPNM
 Mass movement index: Low 0.3 Medium 0.0 High 42.5 Very High 0.0 Wetland 42.8 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit contains forest wetlands (BMP 12.5). Recommend at least partial log suspension when harvesting this unit to minimize the disturbance of these wetlands (BMP 13.9). NRB 8/28/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Extend road past north Class III stream to allow for split yarding. Run profile to establish West unit boundary; logging systems analysis indicate that access road may have to be located further downslope and a Slackline yarding system utilized to attain adequate deflection to planned unit backline.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
 Oversteepened slopes may require full bench construction and endhaul waste. (BMP 14.7)
 Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

Two water quality streams are located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

A portion of unit could be seen from Carroll Inlet. Identified VQO is maximum modification. Adjacent standing will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. Final road locations for access across Carroll Creek will need to be reviewed during final layout. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/28/95

SILVICULTURE INPUT

Moderate volume, with small areas of Hydric soils that will need to be planted. (6 acres). Consideration should be given to a diameter limit cut leaving all trees 13" DBH and under standing if helicopter yarded. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 1017 DEIS# 10

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/ac/draft/crd/dcl095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

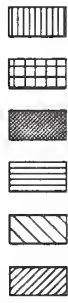


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest

Volc 4 - 23.3
Volc 5 - 17.3
Volc 6 - 0
Volc 7 - 0
Total Acres - 42.9
Potential MBF - 1259.7
Quarter Quad - KTHCSNE
VCU Number - 744
Photo Number - 1890-3
Alternative Pattern - 020000
★ Landing

LOGGING SYSTEMS Abbrev.

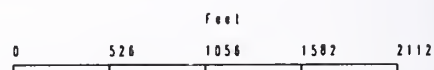
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Mass Movement Index 4 Soil

Projection - Stoleplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 19 Planned Acres: 20.5 Estimated Volume: 277.8 In Alternatives: 2, 3, 4, 5
 Silvicultural System : Clearcut Settings: 8 Quad: KTNC4NW Photo: 1890-49 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 308 Original LSTA Unit: 744-308

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 3.8 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 0.0 Class 5: 3.8 Class 6: 0.0 Class 7: 0.0 Low Productive 16.7
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 20.5 Primary VQO: MM Recreation: SPNM
 Mass movement index: Low 0.0 Medium 20.0 High 0.5 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit contains some high landslide potential soils on upper slopes (L-15 to O-14) (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). NRB 8/28/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Multiple Class III streams within this unit require road/landing locations that will allow split yarding.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

This unit is adjacent to a Class II stream that flows directly into another Class II. Although this stream is not TTRA, a variable 100 foot buffer is recommended to maintain the integrity of the riparian zone (BMP 12.6a and 13.16). This unit also has six water quality streams located within the unit boundary. Recommend that yarding be split on these streams and that trees be felled away from streams. Due to temperature sensitivity concerns, all trees less than 12 inches DBH within 35 feet of class III streams will remain standing, or a windfirm buffer will be delineated.

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

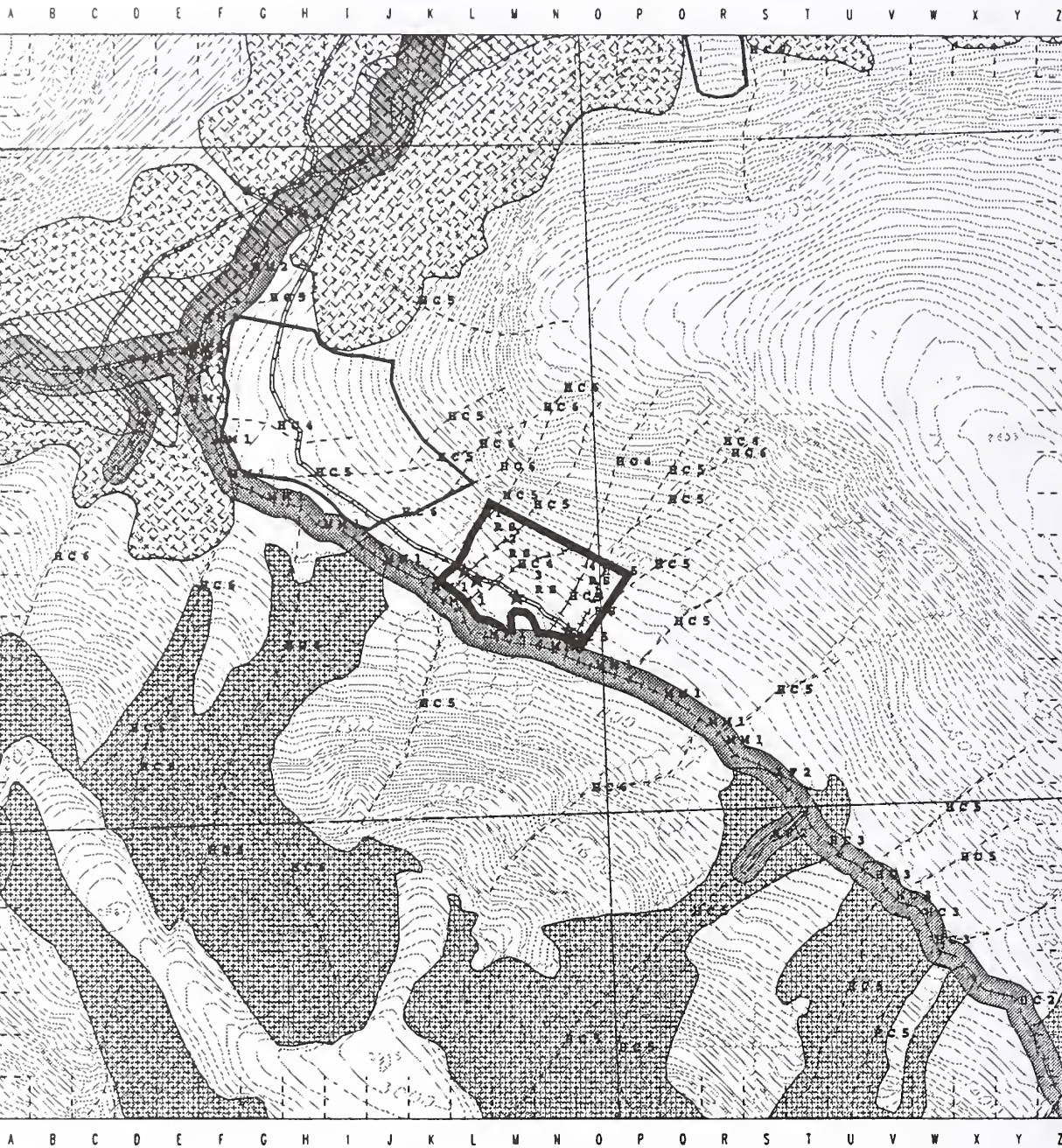
Unit is adjacent to an active avalanche tract (L-15 to K-14). Recommend that an avalanche-firm buffer of trees be maintained along the northeast unit boundary to protect regeneration from damage. NRB 8/28/95

SILVICULTURE INPUT

Highly productive with small areas of high mass movement soils. Planting will be required. (5 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 308 DEIS# 19

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/ac/draft/cor4/dct095.xml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 3.8
Volc 6 - 0
Volc 7 - 0
Total Acres - 20.5
Potential MBF - 277.8
Overlaid Quad - KINC4NW
VCU Number - 744
Photo Number - 1573-187
Alternative Pattern - 023450
★ Landing

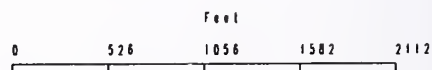
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 20 Planned Acres: 43.7 Estimated Volume: 384.8 In Alternatives: 2, 3, 4, 5
 Silvicultural System: Clearcut Settings: 3 Quad: KTNC4NW Photo: 1890-49 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 310 Original LSTA Unit: 744-310

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 43.7
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 43.7 Primary VOO: MM Recreation: RM
 Mass movement index: Low 0.0 Medium 41.2 High 2.5 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 91% Martin- 91% Otter- 0% Eagle- 0% Black Bear- 91%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

A small area (G-17), about 5 acres, of forested wetland and non-forested muskeg is located in the west-central part of unit (BMP 12.5). This area is suitable for shovel logging (BMP 13.9). NRB 8/28/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Determine eastern boundary with profiles; a slope break with potential blind lead may cause the boundary to be moved downhill.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
 Relocate road through muskeg to avoid populations of Choris bog orchids.

FISH/WATERSHED INPUT

This unit is bordered by two Class II resident fish streams (BMP 12.6). To the north is a TTRA Class II that will require a minimum 100 foot no-cut buffer (BMP 12.6a). Along the southwest boundary is a Class II AHMU stream that should receive a variable 100 foot buffer. Five water quality streams are located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres of harvest. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

No Concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

Unit is located adjacent to avalanche tract (L-15 to J-14). Recommend an avalanche firm buffer of trees be left along the southeast unit boundary to protect regeneration from avalanches. NRB 8/28/95

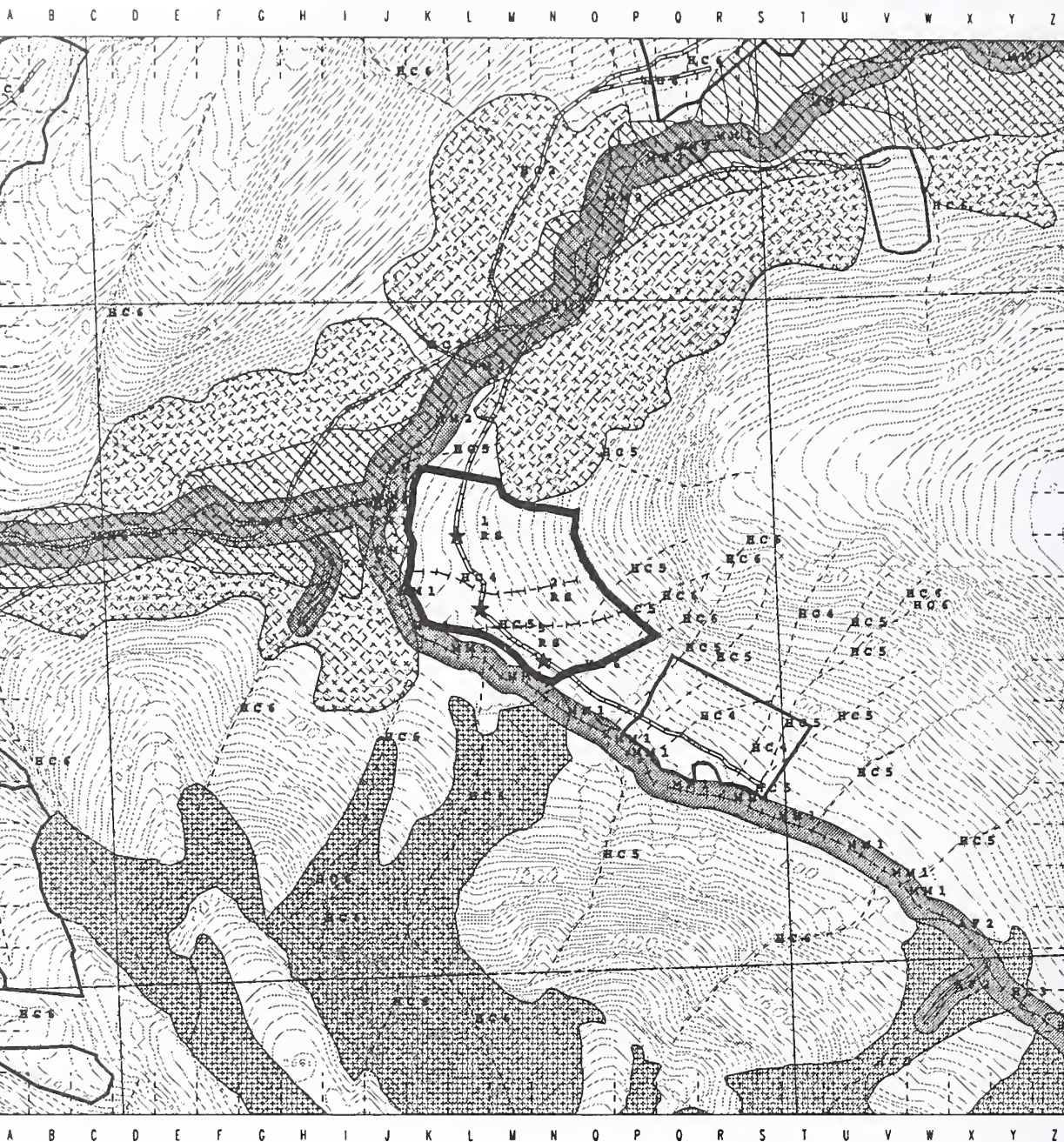
SILVICULTURE INPUT

Highly productive with small areas of high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (6 acres)CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 310 DEIS# 20

Mapscale 1:15840 (4 inch to Mile)

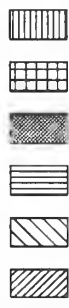
Created 11-4-95, /u08/stall/nc/drillcard/act095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Road
Unit Boundary
Setting Line
Other DC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Induced Soil

Volc 4 - 0
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 43.7
Potential MBF - 384.8
Operator Code - K1NC4W
VCU Number - 744
Photo Number - 1890-49
Alternative Pattern - 023450
★ Landing

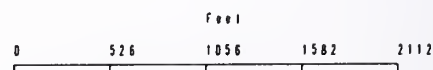
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stolephone



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 21 Planned Acres: 7.7 Estimated Volume: 206.4 In Alternatives: 2, 3, 4, 5
Silvicultural System : Clearcut Settings: 1 Quad: KTNC4NW Photo: 1890-49 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 313 Original LSTA Unit: 744-313

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 7.4 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
Volume class breakdown: Class 4: 7.4 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.3
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 7.7 Primary VQO: MM Recreation: RM
Mass movement index: Low 0.0 Medium 7.7 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/28/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. A slope break and potential blind lead may cause the south unit boundary to be move downhill; run profiles to verify logging feasibility. Also, field reconnaissance shows that there is a lack of adequate runoff for the proposed landing. Confirm final road and landing locations. Change to Helicopter yarding if landing or blindlead is unfeasible.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

This unit is adjacent to a TTRA Class II stream and requires a minimum 100 foot buffer. One water quality stream has been identified in this unit. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

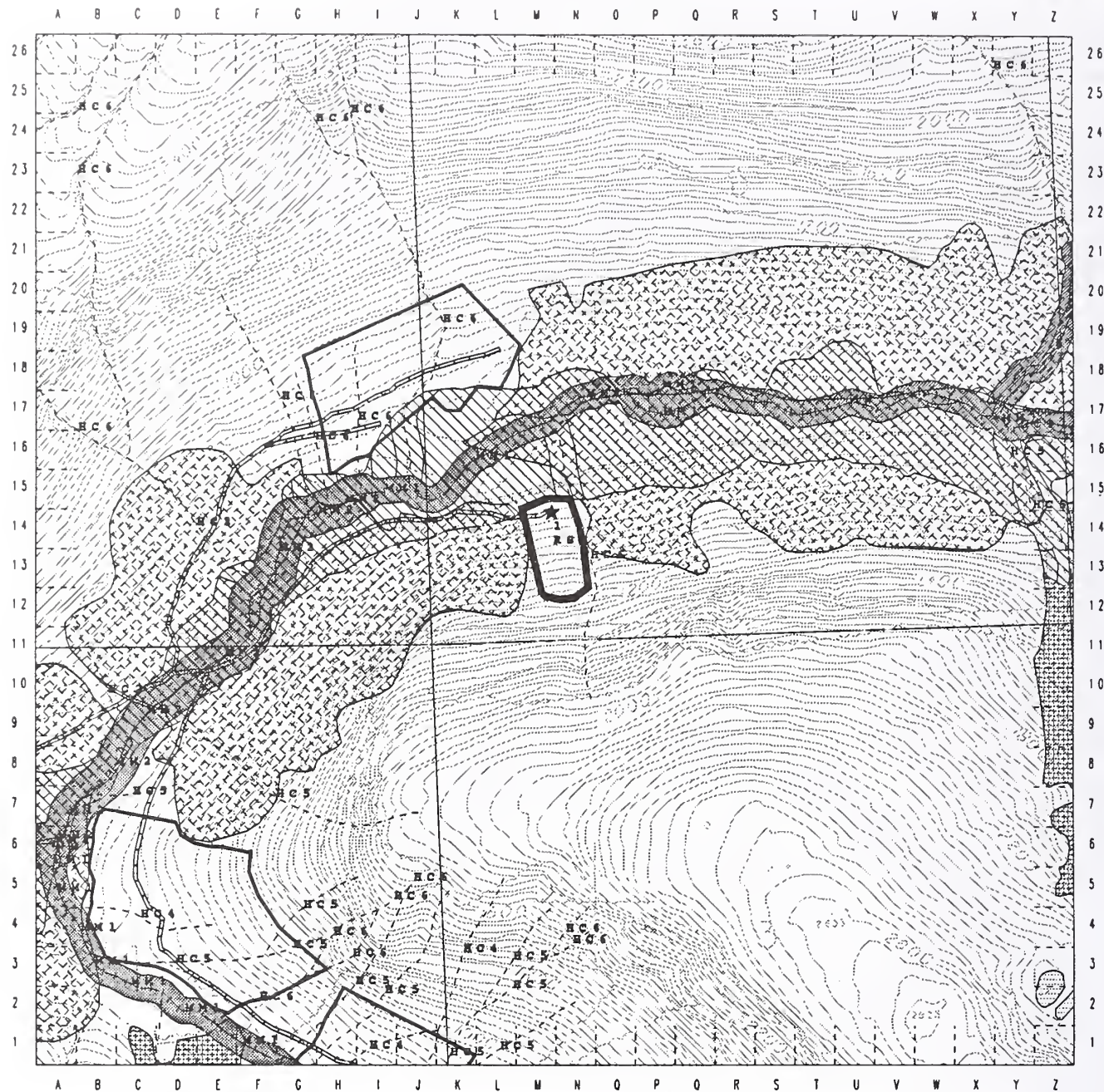
No concerns. NRB 8/28/95

SILVICULTURE INPUT

High productivity. Potential for severe brush competition exists. Plant Sitka spruce. (7 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 313 DEIS# 21

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/stoll/uc/drillcard/dc1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other DC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 7.4
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 7.7
Potential MRF - 205.4
Quarter Quad - KTHC4HW
VCU Number - 744
Photo Number - 1890-49
Alternative Pattern - 023450
* Logging



Eagle Nest

Feet

0 526 1056 1582 2112

Projection - Stateplane

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 22 Planned Acres: 33.4 Estimated Volume: 1,125.6 In Alternatives: 2, 3, 4, 5
 Silvicultural System: Clearcut Settings: 5 Quad: KTNC4NW Photo: 1573-188 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 327 Original LSTA Unit: 744-327

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 32.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
 Volume class breakdown: Class 4: 0.0 Class 5: 32.3 Class 6: 0.0 Class 7: 0.0 Low Productive 1.1
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 33.4 Primary VQO: MM Recreation: RM
 Mass movement index: Low 2.2 Medium 0.0 High 31.2 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The upper slopes (K-13 to M-15) in this unit have a high potential for landslide activity, MMI=3 (BMP 13.5). At least partial log suspension is recommended in yarding to minimize soil disturbance (BMP 13.9). NRB 8/28/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Run profiles on north unit boundary to determine boundary location.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

This unit borders a TTRA Class II stream and requires a minimum 100 foot buffer. Four water quality streams (HC6) have been identified in the unit. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No Concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

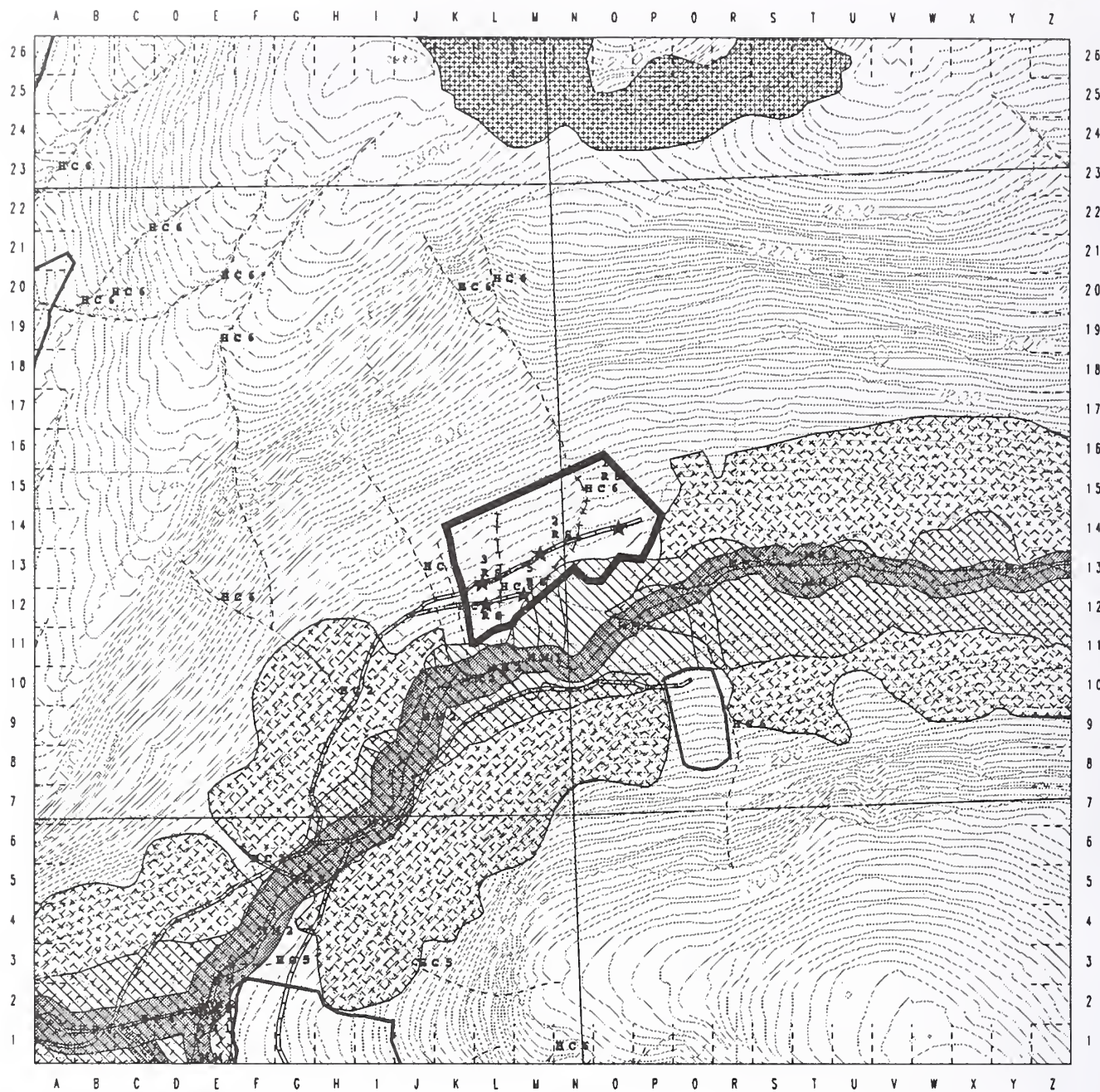
No concerns. NRB 8/28/95

SILVICULTURE INPUT

High productivity, with small areas of high elevation and high mass movement soils. Plant Alaska yellow cedar if available. (15 acres) CBG 10/15/95

Upper Carroll Study Area Unit Schematic - Unit 327 DEIS# 22

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/nc/draftcard/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other DC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest

Volc 4 - 0
Volc 5 - 32.3
Volc 6 - 0
Volc 7 - 0
Total Acres - 33.4
Potential MBF - 1125.6
Quarter Quad - K1NC4NW
VCU Number - 744
Photo Number - 1573-188
Alternative Pattern - 023450
★ Landing

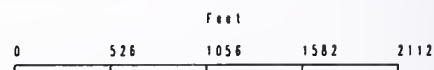
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 23 Planned Acres: 27.8 Estimated Volume: 1,039.0 In Alternatives: 0, 0, 0, 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTNC4NW Photo: 1673-167 Logging systems: HE
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 335 Original LSTA Unit: 744-335

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 21.9 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 21.9 Class 7: 0.0 Low Productive 5.9
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.2 Not Seen 27.6 Primary VQO: MM Recreation: RM
Mass movement index: Low 0.1 Medium 21.6 High 6.1 Very High 0.0 Wetland 21.7 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 72%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

North end of unit (M-14 to M-16) contains some soils which have a high potential for landslides (BMP 13.5).
Helicopter yarding will provide full log suspension and minimize surface disturbance (BMP 13.9). Subalpine sites may
be difficult to regenerate due to snow damage. NRB 8/28/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

One water quality stream flows through the western part of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding
be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees
be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break
buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/28/95

SILVICULTURE INPUT

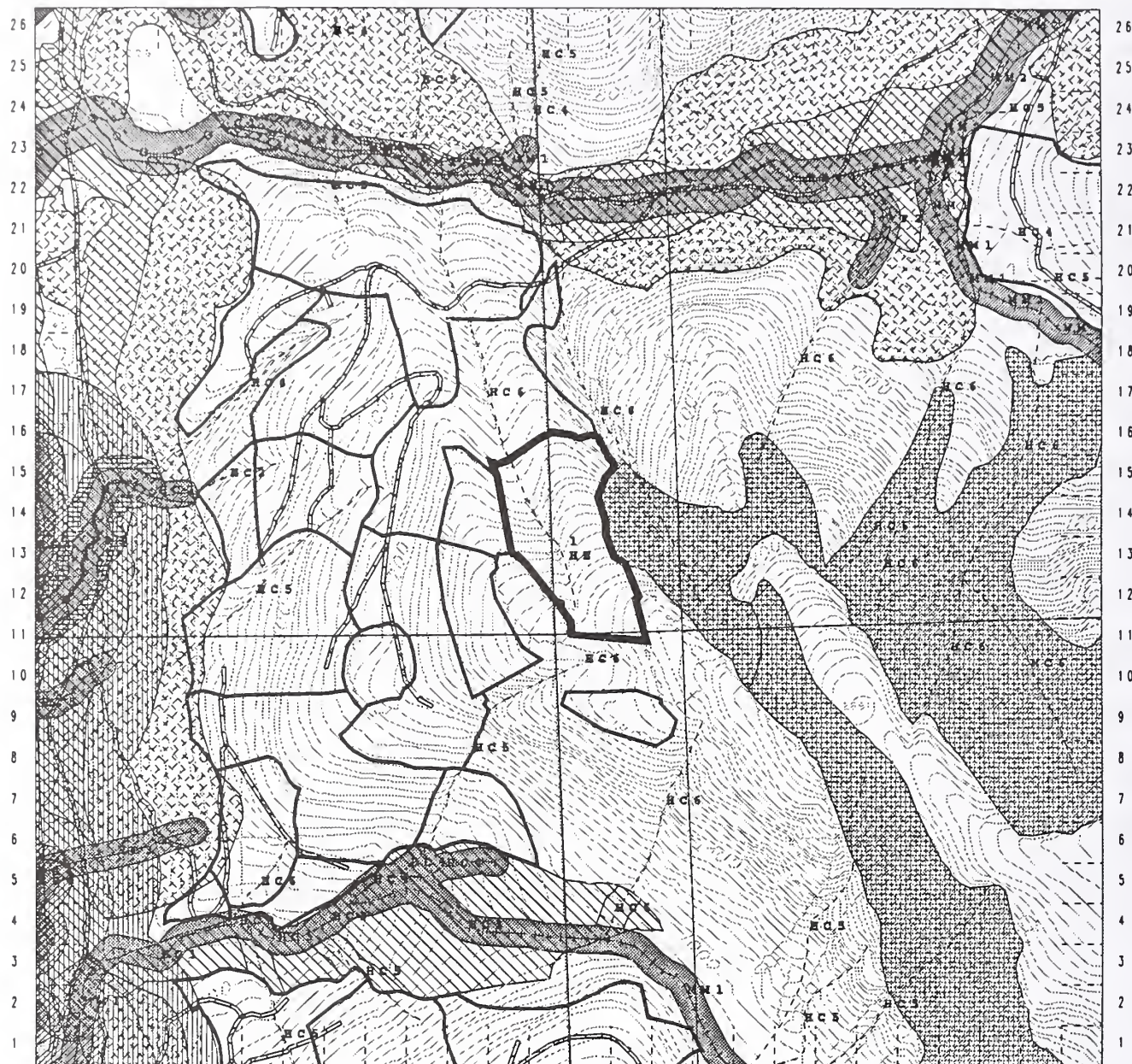
High productivity, with areas of potential mass movement. Apply shelterwood harvest system leaving all trees 13" DBH
and under standing. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 335 DEIS# 23

Mopscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draft/crd/dcl095.wml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Road		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 0
Volc 6 - 21.9
Volc 7 - 0
Total Acres - 27.8
Potential MBF - 1039
Quarter Quad - KTHC4NW
VCU Number - 744
Photo Number - 1673-161
Alternative Pattern - 000000
★ Landing

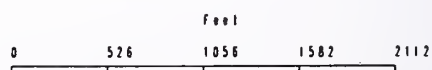
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 24 Planned Acres: 30.0 Estimated Volume: 1,355.1 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Clearcut Settings: 2 Quad: KTNC5NE Photo: 1890-2 Logging systems: SL
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 338 Original LSTA Unit: 744-338

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 30.0 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 30.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 30.0 Not Seen 0.0 Primary VQO: M Recreation: SPNM
 Mass movement index: Low 0.0 Medium 0.0 High 30.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 66% Martin- 66% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The upper slopes of this harvest unit (M-15 and N-12), areas above the road, have a high potential for landslides, MMI=3 (BMP 13.5). Recommend that at least partial log suspension be achieved when yarding down these slopes (BMP 13.9). Shallow soils in this unit are subject to blowdown. Do not recommend any partial cuts in this unit. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Slackline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7)
 Oversteepened slopes may require full bench construction and enhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit is bordered by a Class III water quality stream. A variable slope break buffer is recommended. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Beach and estuary buffer in conjunction with adjacent standing timber will help screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/05

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

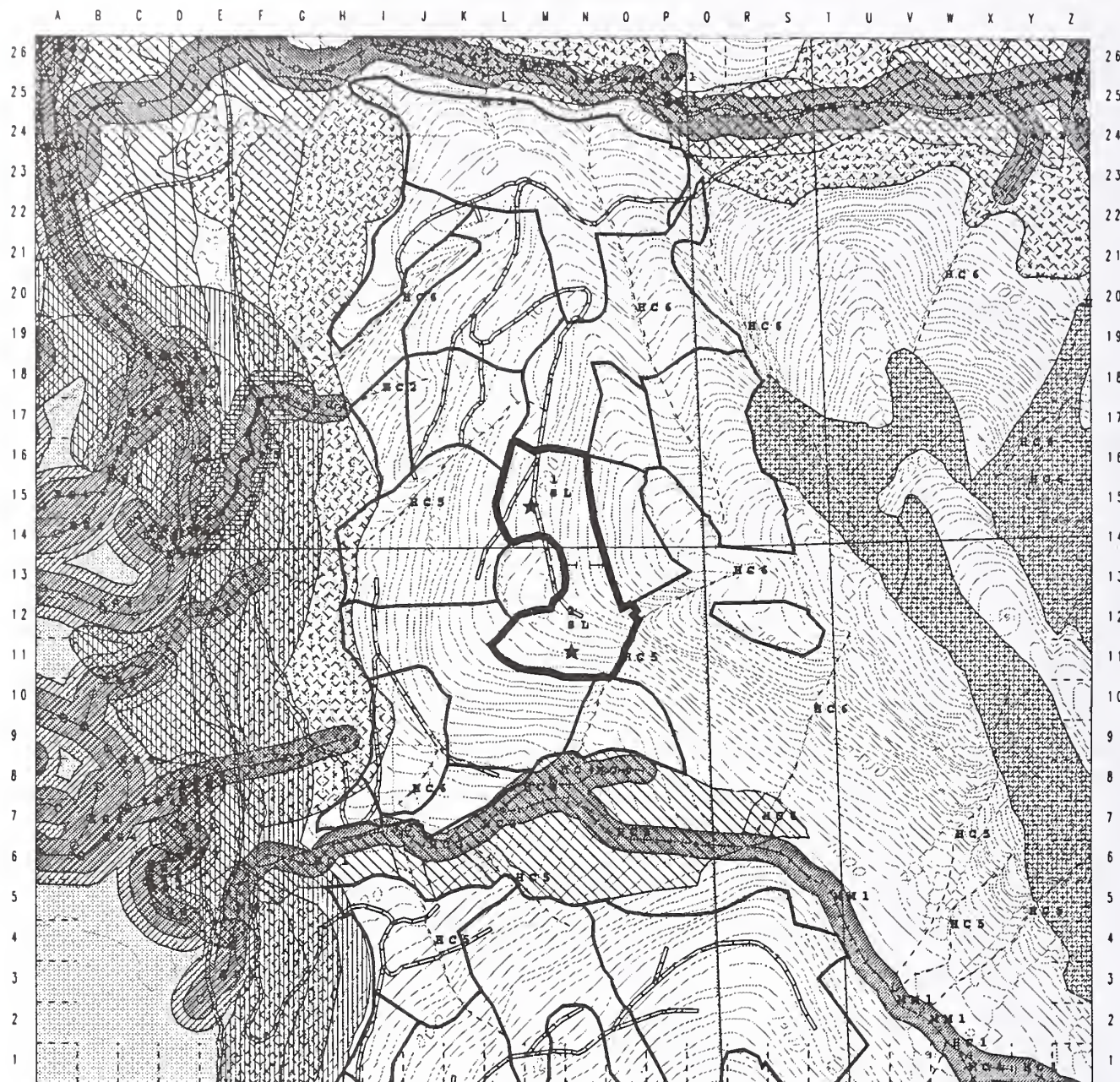
SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (3 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 338 DEIS# 24

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/stoll/ac/drillcard/ac1095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream



Class 2 Stream



Class 3 Stream



Section Line



Planning Roads



Unit Boundary



Setting Line



Other UC DEIS
Unit Boundary
Contour or Ortho
Line



Beach or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index 4 Soil

Volc 4 - 0

Volc 5 - 0

Volc 6 - 30

Volc 7 - 0

Total Acres - 30

Potential MBF - 1355.1

Quarter Quad - KTHCSNE

VCU Number - 744

Photo Number - 1890-2

Alternative Pattern - 020050

* Logging

LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Slack Line

SH Shovel Yarding

Projection - Stateplane



Eagle Nest

Feet

0 528 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 25 Planned Acres: 10.3 Estimated Volume: 466.5 In Alternatives: 0, 0, 0, 0
Silvicultural System: Clearcut Settings: 1 Quad: KTNC5NE Photo: 1673-160 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 339 Original LSTA Unit: 744-339

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 5.4 Spruce 0.0 Mixed Hem/Spr 4.9 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 10.3 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 10.3 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 0.0 Medium 0.0 High 10.3 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding to minimize surface disturbance (BMP 13.9). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Run profiles to establish east unit boundary; slope break/blind lead may cause boundary to come downhill.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7).
Oversteepened slopes may require full bench construction and endhaul of waste (BMP 14.7).

FISH/WATERSHED INPUT

This unit is bordered by a Class II AHMU stream that flows along the southern unit boundary. A variable 100 foot buffer is recommended (BMPs 12.6a, 13.16). A water quality stream flows through the western part of this unit. Recommend that yarding be split on this stream (BMP 13.9), trees be felled away from stream-course and slash removed within 48 hours. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll inlet. Identified VQO is modification. Beach and estuary buffer in conjunction standing adjacent timber and class II stream buffer will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

High productivity with good natural regeneration. No concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 339 DEIS# 25

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/stall/sc/draftcard4/dcl095 eml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index & Soil

LOGGING SYSTEMS Abbrev.

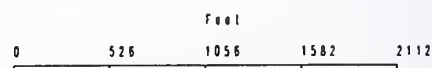
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 0
Volc 5 - 0
Volc 6 - 10.3
Volc 7 - 0
Total Acres - 10.3
Potential MBF - 466.5
Quarter Quad - KTNCSNE
VCU Number - 744
Photo Number - 1673-160
Alternative Pattern - 000000
★ Logging



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 26 Planned Acres: 9.9 Estimated Volume: 372.2 In Alternatives: 0, 0, 0, 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1890-1 Logging systems: HE
Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 344 Original LSTA Unit: 744-344

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 7.9 Nonforested 0.9 Aspect: NW
Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 7.9 Class 7: 0.0 Low Productive 1.1
Archeology 0-100: 0.0 100-200: 0.0 Seen 9.9 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 0.3 Medium 9.6 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be visible from the interior of Carroll estuary. Identified VQO is modification. Partial cutting will help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

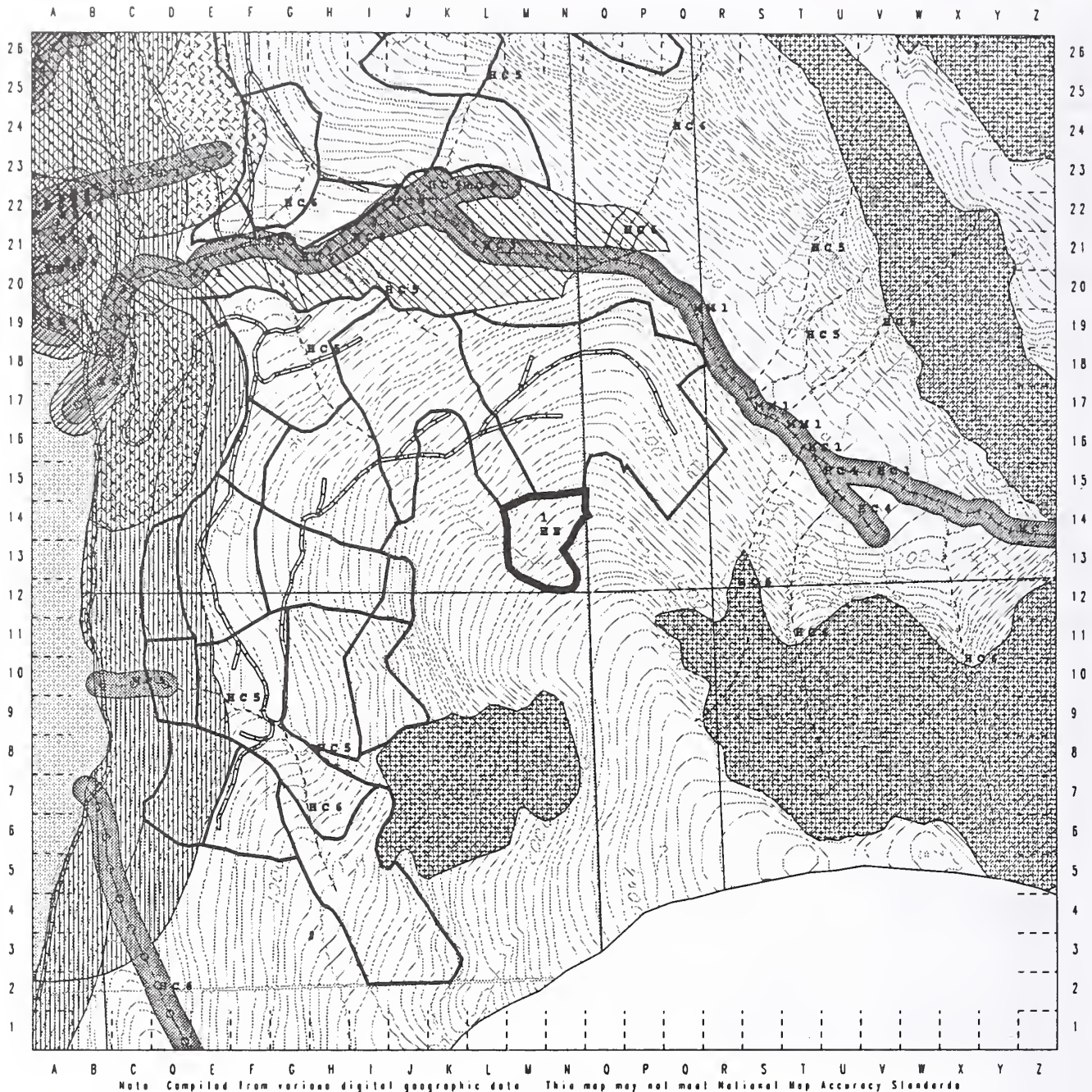
No concerns. NRB 8/29/95

SILVICULTURE INPUT

Moderate productivity with good natural regeneration. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 344 DEIS# 26

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/draft/cad/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Wetland Buffer	Volc 4 - 0
	Class 2 Stream		Private Land	Volc 5 - 0
	Class 3 Stream		No Cut Buffer	Volc 6 - 7.9
	Section Line		Partial or Selective Harvest Buffer	Volc 7 - 0
	Planning Road		Riparian Soil Buffer	Total Acres - 9.9
	Unit Boundary		No Programmed Harvest Buffer	Potential MBF - 372.2
	Setback Line		Body of Water	Quarter Quad - KTHCSNE
	Other UC DEIS Unit Boundary Contour or Ortho Line		Prior Harvest	VCU Number - 744
			Mass Movement Index 4 Soil	Photo Number - 1890-1
				Alternative Pattern - 000000
				★ Landing

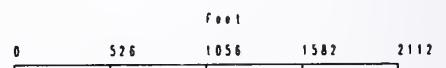
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 27 Planned Acres: 32.7 Estimated Volume: 1,449.7 In Alternatives: 0, 3, 0, 0
 Silvicultural System : Clearcut Settings: 5 Quad: KTNC5NE Photo: 1673-160 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 345 Original LSTA Unit: 744-345

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.2 Spruce 0.0 Mixed Hem/Spr 31.9 Nonforested 0.0 Aspect: NW
 Volume class breakdown: Class 4: 0.0 Class 5: 0.2 Class 6: 31.9 Class 7: 0.0 Low Productive 0.7
 Archeology 0-100: 0.0 100-200: 0.0 Seen 32.7 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 15.0 High 17.7 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The upper slopes in this unit (L-12 and O-12), above the road, have a high potential for landslides, MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Southeastern corner of planned unit appears to be a blindlead. Verify and modify unit boundary as required. If upper road is not required for other units, switch logging systems design to helicopter.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7)
 Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)
 Coho/Pink timing (June 1 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

One water quality stream flows through the northeast corner of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll estuary. Identified VQO is modification. Adjacent uncut units will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Planting may be necessary, using Alaska yellow cedar if available. (5 acres) Consideration should be given to a diameter limit cut leaving all trees 13" DBH and under standing if helicopter yarded. CBG 10/16/95

Created 11-4-95, /u08/staff/uc/draftcard/dc1095.nml

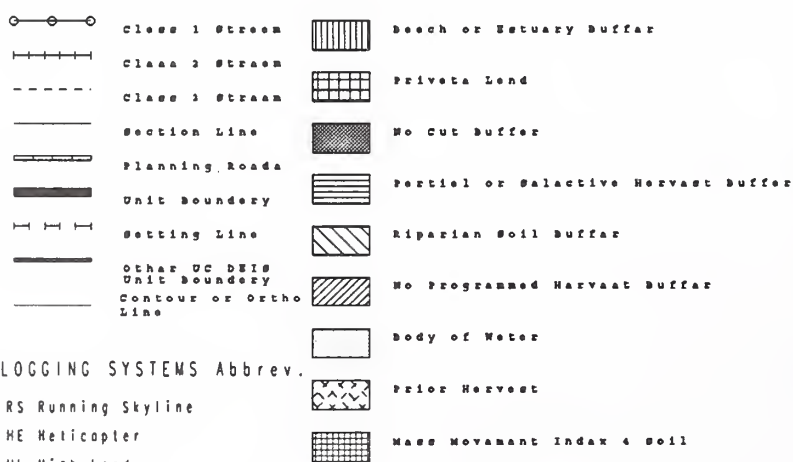


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



SH Shovel Yarding

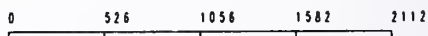
Vole 4 - 0
 Vole 5 - 0.2
 Vole 6 - 31.9
 Vole 7 - 0
 Total Acre - 32.7
 Potential WBF - 1449.7
 Quarter Quad - KTHCSNE
 VCU Number - 744
 Photo Number - 1673-160
 Alternative Pattern - 003000
 ★ Lending



Eagle Meet

Projection - Stateplane

feet



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 28 Planned Acres: 22.2 Estimated Volume: 1,002.7 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Clearcut Settings: 2 Quad: KTNC5NE Photo: 1673-160 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 346 Original LSTA Unit: 744-346

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 9.2 Spruce 0.0 Mixed Hem/Spr 15.4 Nonforested 0.0 Aspect: NW
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 22.2 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 25.0 Not Seen 0.0 Primary VQO: PR Recreation: RM
 Mass movement index: Low 0.0 Medium 10.4 High 14.6 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 80% Martin- 80% Otter- 0% Eagle- 0% Black Bear- 80%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
 Northeastern corner of planned unit maybe a blindlead depending on final access road location.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
 Pink/Chum timing (June 1 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

A water quality stream flow through the middle of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split
 on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be
 felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break
 buffers may also be required for water quality stream located along eastern boundary. (BMP 12.6a) NRB
 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll estuary. Identified VQO is partial retention. Beach and estuary buffer will help
 screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

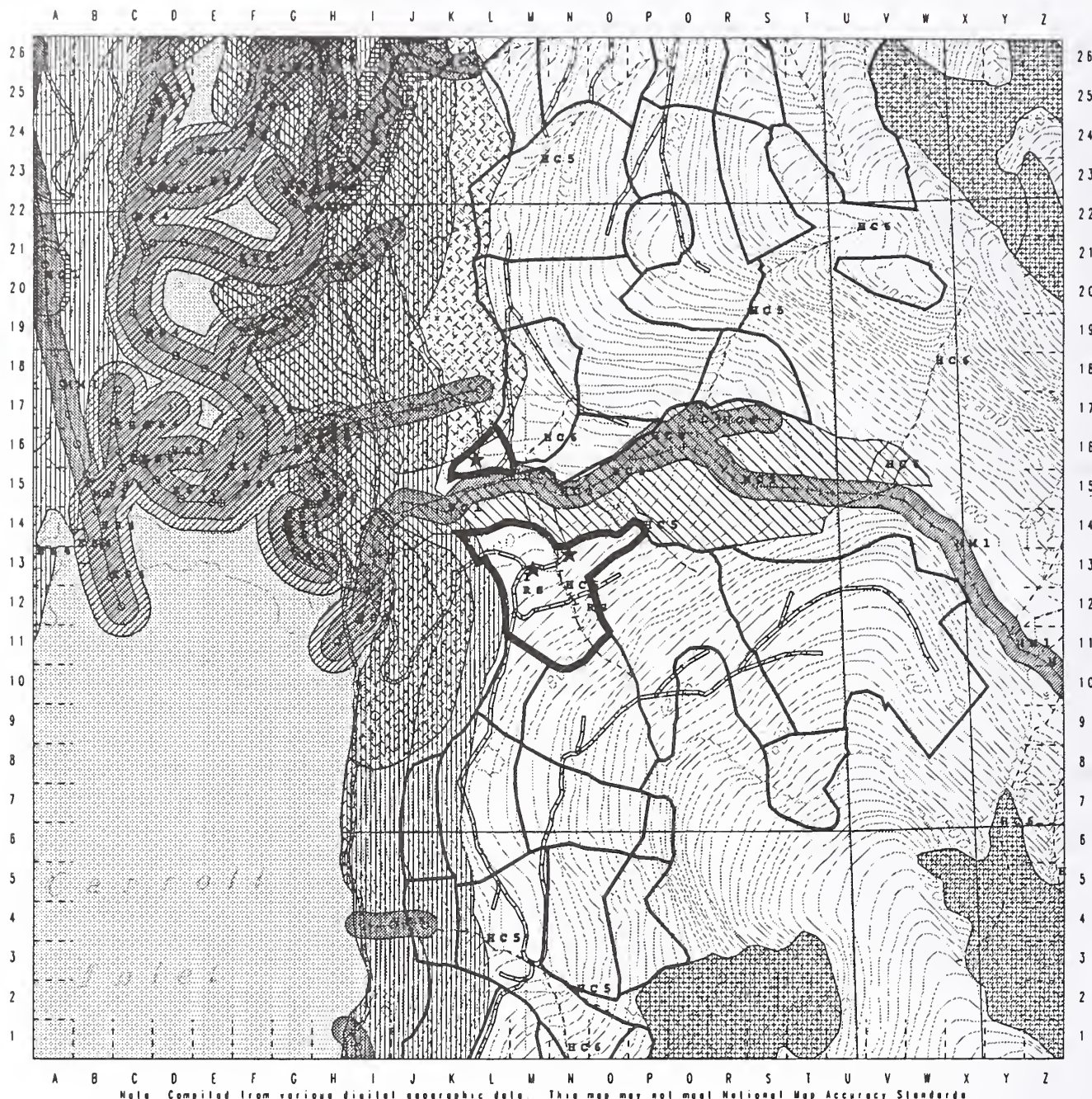
No concerns. NRB 8/29/95

SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Planting will be required, using
 Alaska yellow cedar if available. (3 acres) Consideration should be given to a diameter limit cut leaving all trees
 13" DBH and under standing if helicopter yarded. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 346 DBIS# 28

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stell/uc/drillcord/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DBIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index & Soil

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 0
Volc 5 - 0
Volc 6 - 22.2
Volc 7 - 0
Total Acres - 22.2
Potential MBF - 1002.7
Quarter Oad - KTHCSHE
VCU Number - 744
Photo Number - 1673-160
Alternative Patterns - 020050
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 29 Planned Acres: 5.9 Estimated Volume: 226.0 In Alternatives: 2, 0, 4, 5
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-1 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 347 Original LSTA Unit: 744-347

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 3.8 Spruce 0.0 Mixed Hem/Spr 2.1 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 0.0 Class 5: 3.8 Class 6: 2.1 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 5.9 Not Seen 0.0 Primary VQO: PR Recreation: RM
Mass movement index: Low 0.0 Medium 5.9 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll estuary. Identified VQO is partial retention. Beach and estuary buffer will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

High productivity with good natural regeneration. No concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 347 DEIS# 29

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stuff/ac/draftcard/dcl095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

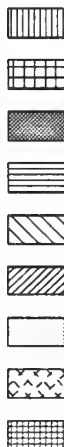


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other DC DEIS Unit Boundary
Contour or Ortho Line



Beech or Wetland Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 3.8
Volc 6 - 2.1
Volc 7 - 0
Total Acres - 5.9
Potential MBR - 226
Quarter Quad - K1HC5NE
VCU Number - 744
Photo Number - 1890-1
Alternative Pattern - 020450
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 30 Planned Acres: 21.3 Estimated Volume: 803.3 In Alternatives: 2, 0, 4, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1673-160 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 348 Original LSTA Unit: 744-348

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 14.9 Spruce 0.0 Mixed Hem/Spr 6.4 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 0.0 Class 5: 14.9 Class 6: 6.4 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 21.3 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 0.0 Medium 18.4 High 2.9 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 93% Otter- 0% Eagle- 0% Black Bear- 93%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
Northeastern corner of planned unit crosses a Class III stream. Verify full suspension over stream and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

One water quality stream flows through the north corner of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16).

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll Inlet. Identified VQO is modification. Beach, estuary and adjacent uncut units will help to mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

High productivity. No concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 348 DEIS# 30

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/sc/draftcard/dct1895.aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary Contour or Ortho Line		Prior Harvest
			Mass Movement Index 4 Soil

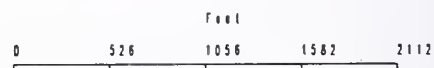
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Volc 4 - 0
Volc 5 - 14.9
Volc 6 - 6.4
Volc 7 - 0
Total Acres - 21.3
Potential MRF - 803.3
Quarter Quad - KTHCSNE
VCU Number - 744
Photo Number - 1673-160
Alternative Pattern - 020400
★ Landing



Eagle Nest



Projection - Stateplane

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 31 Planned Acres: 15.6 Estimated Volume: 538.2 In Alternatives: 0, 0, 0, 0
Silvicultural System: Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-1 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 349 Original LSTA Unit: 744-349

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 15.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.1 Aspect: W
Volume class breakdown: Class 4: 0.0 Class 5: 15.6 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 15.6 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 0.0 Medium 15.6 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll Inlet. Identified VQO is modification. Beach, estuary and adjacent uncut units help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

Moderate productivity with good natural regeneration. No concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 349 DEIS# 31

Mapscale 1:15840 (4 inch to Mile)

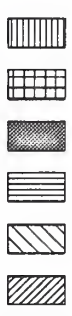
Created 11-4-95, /s08/staff/uc/draftcard/dcl095 amf



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Setuery Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 15.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 15.6
Potential MBF - 538.2
Quarter Quad - KTC5NE
VCU Number - 744
Photo Number - 1890-1
Alternative Pollers - 000000
★ Landing

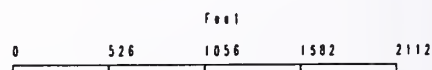
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stoleplone



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 32 Planned Acres: 18.4 Estimated Volume: 635.1 In Alternatives: 0, 0, 0, 0
 Silvicultural System: Clearcut Settings: 2 Quad: KTNC5NE Photo: 1890-1 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 350 Original LSTA Unit: 744-350

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 18.4 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 18.4 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 18.4 Not Seen 0.0 Primary VQO: PR Recreation: RM
 Mass movement index: Low 0.0 Medium 18.4 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 100% Eagle- 100% Black Bear- 100%

Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit contains several acres of forested wetlands (M-14), with small patches of open muskeg (BMP 12.5). These areas are suitable for shovel logging (BMP 13.9). Road construction should avoid areas of open muskeg (BMP 14.2) NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. 1000' estuary buffer required.

ENGINEERING INPUT

Road construction should avoid areas of open muskeg. (BMP 14.2)

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas. Modify west unit boundary to avoid the 1,000 foot estuary buffer.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll Inlet. Identified VQO is partial retention. Beach and estuary buffer will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

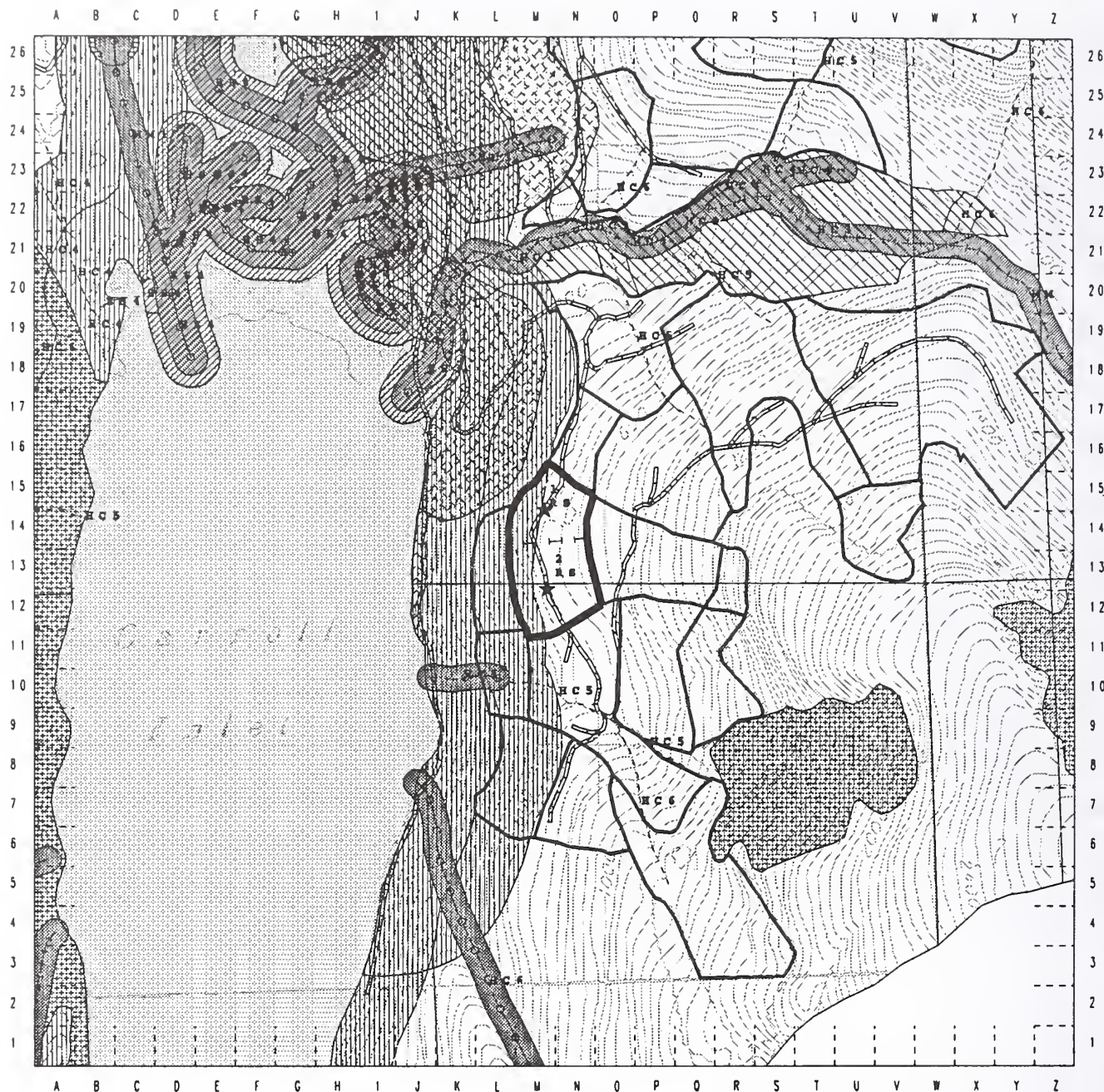
No concerns. NRB 8/29/95

SILVICULTURE INPUT

This unit has high volume, with small areas of Hydric soils that will need to be planted. (3 acres)
 Monitor regeneration adjacent to muskegs. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 350 DEIS# 32

Mopscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stat/uc/draftcard/ec1095 owl



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 0
Volc 5 - 18.4
Volc 6 - 0
Volc 7 - 0
Total Acres - 18.4
Potential MBF - 835.1
Quarter Quad - KTHC5NE
VCU Number - 744
Photo Number - 1890-1
Alternative Pattern - 000000
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest

Feet
0 528 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 33 Planned Acres: 7.2 Estimated Volume: 247.1 In Alternatives: 0, 0, 0, 0
 Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1673-159 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 351 Original LSTA Unit: 744-351

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 7.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 7.2 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 7.2 Not Seen 0.0 Primary VQO: PR Recreation: RM
 Mass movement index: Low 0.0 Medium 7.2 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter. This unit is not in any alternative. It should be dropped from the unit pool as it is located entirely within the 1000 foot estuary buffer.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas. Entire unit is in the 1,000 foot estuary buffer-no programed harvest allowed.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll Inlet. Identified VQO is partial retention. Unit is within estuary buffer. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

Unit in estuary buffer. Should not be considered for harvest, regeneration will then be no problem. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 351 DEIS# 33

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s00/staff/uc/draftcard/dcl095.sml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer	Volc 4 - 0
	Class 2 Stream		Private Land	Volc 5 - 7.2
	Class 3 Stream		No Cut Buffer	Volc 6 - 0
	Section Line		Partial or Selective Harvest Buffer	Volc 7 - 0
	Planning Roads		Riparian Soil Buffer	Total Acres - 7.2
	Unit Boundary		No Programmed Harvest Buffer	Potential MBF - 247.1
	Settling Line		Body of Water	Quarter Quad - KTHCSNE
	Other UC DEIS Unit Boundary		Prior Harvest	VCU Number - 744
	Contour or Ortho Line		Mass Movement Index & Soil	Photo Number - 1673-150
				Alternative Pattern - 000000
				★ Landing

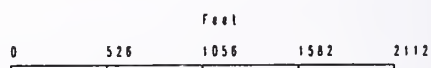
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 34 Planned Acres: 6.4 Estimated Volume: 222.6 In Alternatives: 0, 0, 0, 0
 Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1673-159 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 352 Original LSTA Unit: 744-352

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 6.4 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 6.4 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 6.4 Not Seen 0.0 Primary VQO: PR Recreation: RM
 Mass movement index: Low 0.0 Medium 6.4 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter. Unit is entirely within estuary buffer. No programmed timber harvest allowed. Recommend unit be deleted from unit pool.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

There is a Class II resident fish stream that flows through the center of the unit. This stream will require a minimum 100 foot TTRA buffer. SPL 1/3/95

WILDLIFE INPUT

Timber harvest activities restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas. Entire unit is in the 1,000 foot estuary buffer, no programmed timber harvest allowed.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is partial retention. Unit is within estuary buffer limiting visual screening. WEA 9/30/95.

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

High productivity with small areas of high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 352 DEIS# 34

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s08/staff/uc/draftcard/dc1095 eml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Road
- Unit Boundary
- Setting Line
- other UC DEIS Unit Boundary Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mose Movement Index 4 Soil

Volc 4 - 0
 Volc 5 - 6.4
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 6.4
 Potential MBF - 222.6
 Quarter Quad - KTNC5ME
 VCU Number - 744
 Photo Number - 1673-159
 Alternative Pattern - 000000
 * Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Stock Line
 SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 35 Planned Acres: 25.2 Estimated Volume: 826.4 In Alternatives: 2, 3, 4, 5
 Silvicultural System: Shelterwood Settlings: 3 Quad: KTNC5NE Photo: 1673-159 Logging systems: HE RS
 Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 353 Original LSTA Unit: 744-353

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 23.5 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 23.5 Class 6: 0.0 Class 7: 0.0 Low Productive 1.7
 Archeology 0-100: 0.0 100-200: 0.0 Seen 25.2 Not Seen 0.0 Primary VQO: PR Recreation: SPNM
 Mass movement index: Low 0.0 Medium 22.2 High 3.0 Very High 0.0 Wetland 3.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martln- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Helicopter. Confirm final road and landing locations. 1000' estuary buffer required.

ENGINEERING INPUT

Pink/Chum timing (June 1 - August 7) may apply for all road construction and/or drainage installations

FISH/WATERSHED INPUT

Two water quality streams are located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas. Modify the west unit boundary to avoid the 1,000 foot estuary buffer.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is partial retention. Beach and estuary buffer will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. 8/29/95

SILVICULTURE INPUT

Moderate productivity. Consideration should be given to a diameter limit cut leaving all trees 13" DBH and under standing in helicopter portion. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 353 DEIS# 35

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /a00/stuff/uc/drillcard/dc1095.sml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Road		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 23.5
Volc 6 - 0
Volc 7 - 0
Total Acres - 25.2
Potential MBF - 826.4
Quarter Quad - KTHC5HE
VCU Number - 744
Photo Number - 1673-159
Alternative Pattern - 023450
★ Landing

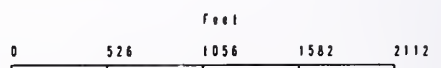
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 36 Planned Acres: 15.6 Estimated Volume: 497.4 In Alternatives: 0, 0, 0, 0
 Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1673-159 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 354 Original LSTA Unit: 744-354

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 14.0 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 14.0 Class 6: 0.0 Class 7: 0.0 Low Productive 1.6
 Archeology 0-100: 0.0 100-200: 0.0 Seen 15.5 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 15.6 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Verify road and landing locations.

ENGINEERING INPUT

No concerns.

FISH/WATERSHED INPUT

A water quality stream is located along the southern unit boundary. (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). A slope break buffer is recommended due to the presence of fish habitat located downstream. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Beach, estuary and uncut adjacent units would help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

Highly productive with good natural regeneration. No concerns. 10/16/95 CBG

Upper Carroll Study Area Unit Schematic - Unit 354 DEIS# 36

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /x00/slat/uc/draticard/dc1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream



Class 2 Stream



Class 3 Stream



Section Line



Planning Roads



Unit Boundary



Wetting Line



other UC DEIS Unit Boundary



Contour or Ortho Line



Beach or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index & Soil

Volc 4 - 0

Volc 5 - 14

Volc 6 - 0

Volc 7 - 0

Total Acres - 15.6

Potential M8F - 497.4

Quarter Quad - KTMCSHE

VCU Number - 744

Photo Number - 1673-159

Alternative Pattern - 000000

* Landing

LOGGING SYSTEMS Abbrev

RS Running Skyline

HE Helicopter

HL High Lead

SL Slack Line

SH Shovel Yarding

Projection - Stereoplex



Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 37 Planned Acres: 26.8 Estimated Volume: 767.7 In Alternatives: 2, 0, 4, 0
 Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1673-159 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 355 Original LSTA Unit: 744-355

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 20.7 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 20.7 Class 6: 0.0 Class 7: 0.0 Low Productive 6.1
 Archeology 0-100: 0.0 100-200: 0.0 Seen 26.8 Not Seen 0.0 Primary VQO: M Recreation: SPNM
 Mass movement index: Low 0.0 Medium 2.5 High 24.3 Very High 0.0 Wetland 24.3 Mix Wetland 0.0
 % of High Value Habitat: Deer- 74% Martin- 74% Otter- 0% Eagle- 0% Black Bear- 74%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists mostly of high landslide potential soils, MMI=3 (BMP 13.5). At least partial log suspension is recommended when yarding (BMP 13.9). Unit includes some forested wetlands, supporting low productivity mixed conifer stands (BMP 12.5). Again partial log suspension is recommended when yarding these sites (BMP 13.9). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7)
 Oversteepened slopes may require fullbench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

One water quality stream flows through the north central part of this unit. SPL 8/29/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Adjacent uncut timber and partial cutting will help to mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

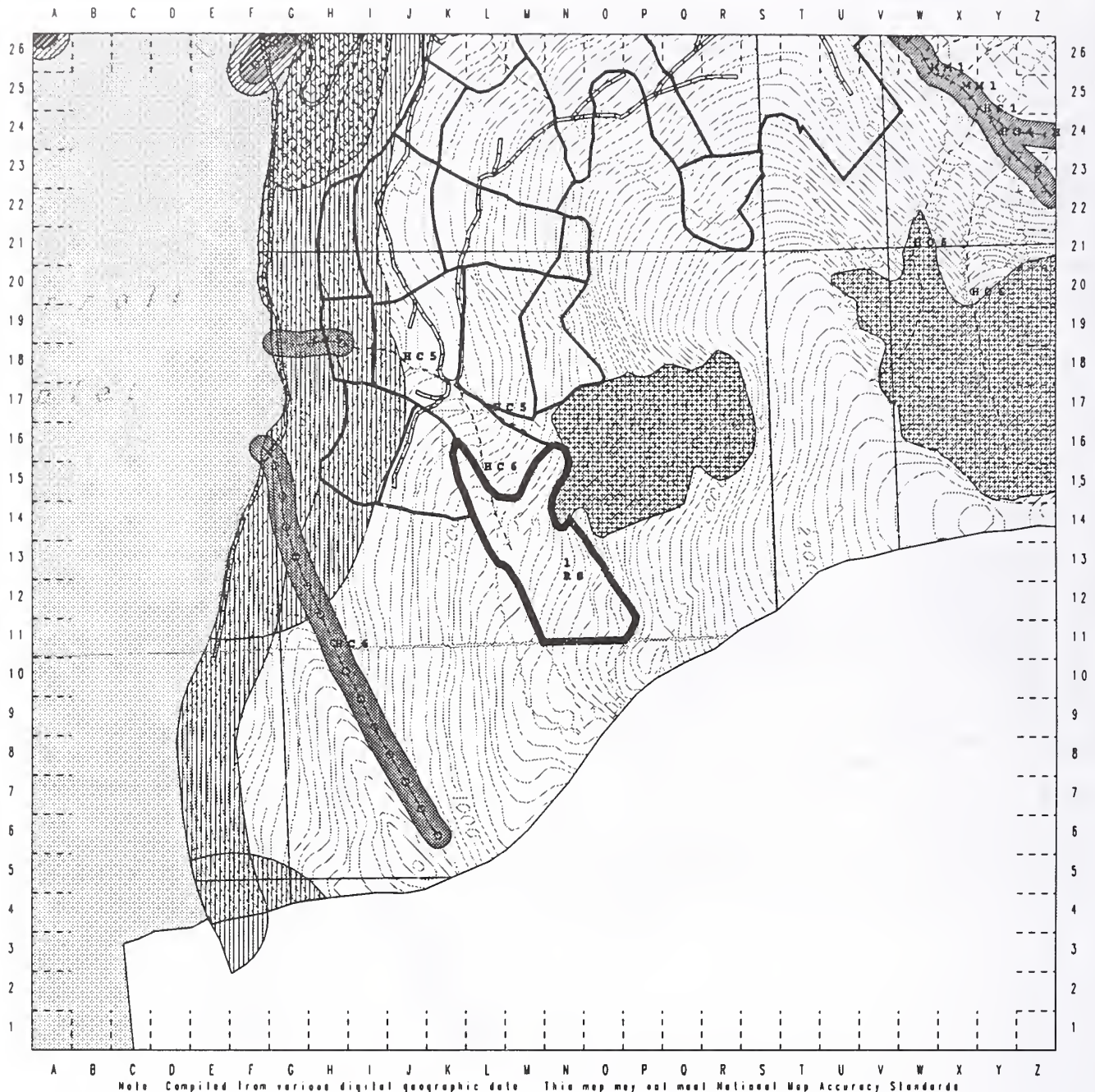
SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/16/95

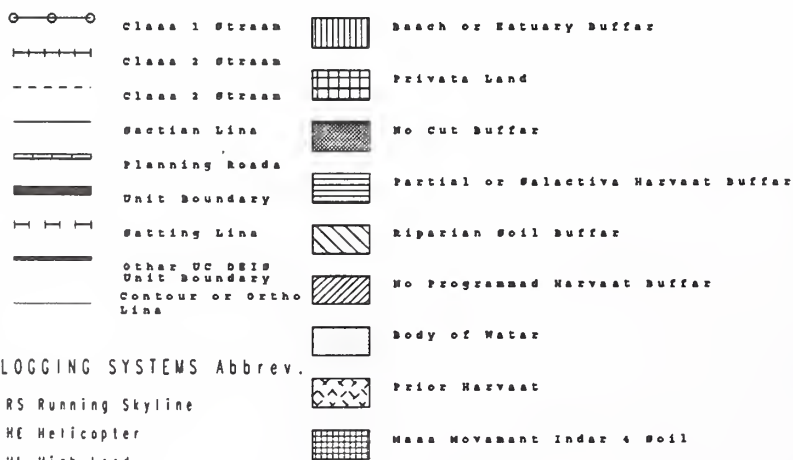
Upper Carroll Study Area Unit Schematic - Unit 355 DEIS# 37

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/stall/uc/draftcard/dcl095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Volc 4 - 0
 Volc 5 - 20.7
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 26.8
 Potential MBR - 767.7
 Quarter Quad - KTHCSNE
 VCU Number - 744
 Photo Number - 1673-159
 Alternative Pattern - 020400
 ★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Stock Line
 SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 38 Planned Acres: 10.2 Estimated Volume: 353.5 In Alternatives: 0, 3, 0, 5
Silvicultural System : Shelterwood Settings: 2 Quad: KTNC5NE Photo: 1673-159 Logging systems: HE RS
Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 356 Original LSTA Unit: 744-356

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 10.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 0.0 Class 5: 10.2 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 10.2 Not Seen 0.0 Primary VQO: PR Recreation: SPNM
Mass movement index: Low 0.0 Medium 9.5 High 0.8 Very High 0.0 Wetland 0.8 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Helicopter. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is partial retention. Beach buffer and uncut adjacent standing timber will help screen unit. Partial cutting along the top of unit will mollify visual impact also.

LANDS INPUT

No concerns. 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. 8/29/95

SILVICULTURE INPUT

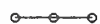
High productivity. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/16 95

Upper Carroll Study Area Unit Schematic - Unit 356 DEIS# 38

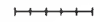
Mapscale 1:15840 (4 inch to Mile)
 Created 11-4-95, /u08/staff/uc/draftcard/dc1095 nml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream



Class 2 Stream



Class 3 Stream



Section Line



Planning Road



Unit Boundary



Setting Line



Other UC DEIS Unit Boundary



Contour or Ortho Line



Beach or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index 4 Soil

Volc 4 - 0

Volc 5 - 10.2

Volc 6 - 0

Volc 7 - 0

Total Acres - 10.2

Potential MBF - 353.5

Quarter Quad - KTNCSHE

VCU Number - 744

Photo Number - 1873-158

Alternative Pattern - 003050

* Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Slack Line

SH Shovel Yarding

Projection - Stateplane



Eagle Nest

Feet

0 528 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 39 Planned Acres: 11.3 Estimated Volume: 391.3 In Alternatives: 0, 0, 0, 0
Silvicultural System: Clearcut Settings: 1 Quad: KTNC5NE Photo: 1673-159 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 357 Original LSTA Unit: 744-357

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 11.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
Volume class breakdown: Class 4: 0.0 Class 5: 11.3 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 11.3 Not Seen 0.0 Primary VQO: PR Recreation: RM
Mass movement index: Low 0.0 Medium 11.3 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 100% Eagle- 100% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
West portion of planned unit appears to be a blindlead. Unit appears to be located within estuary (1000' buffer required) No Programmed Harvest buffer. Need to validate that estuary buffer extends this far into inlet.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/29/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.
Entire unit is in the 1,000 foot estuary buffer, no programmed timber harvest allowed.

RECREATION / VISUALS INPUT

Unit May be seen from Carroll Inlet. Identified VQO is partial retention. Beach buffer would help screen unit.
Validate the extent of estuary buffer. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

Highly productive with good natural regeneration. Verify estuary buffer. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 357 DEIS# 39

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/uc/draftcard/dcl095.wml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Settling Line
- Other UC DEIS Unit Boundary
- Contour or Ortho Line

- Beech or Recovery Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 11.3
Volc 6 - 0
Volc 7 - 0
Total Acres - 11.3
Potential WBF - 391.3
Quarter Quad - KTNCSHE
VCU Number - 744
Photo Number - 1673-159
Alternative Pattern - 000000
★ Landing

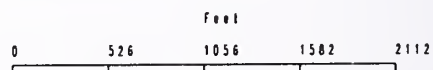
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stoleplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 40 Planned Acres: 6.8 Estimated Volume: 305.1 In Alternatives: 0, 0, 0, 5
 Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1673-160 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 358 Original LSTA Unit: 744-358

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 2.4 Spruce 0.0 Mixed Hem/Spr 4.4 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 6.8 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 6.7 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 0.0 High 6.8 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarded (BMP 13.9). NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
 Pink/Chum timing (June 1 - August 7) may apply for all road construction and/or drainage installation.

FISH/WATERSHED INPUT

The southern unit boundary is adjacent to a Class II TTRA stream and will require a minimum 100 foot buffer. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

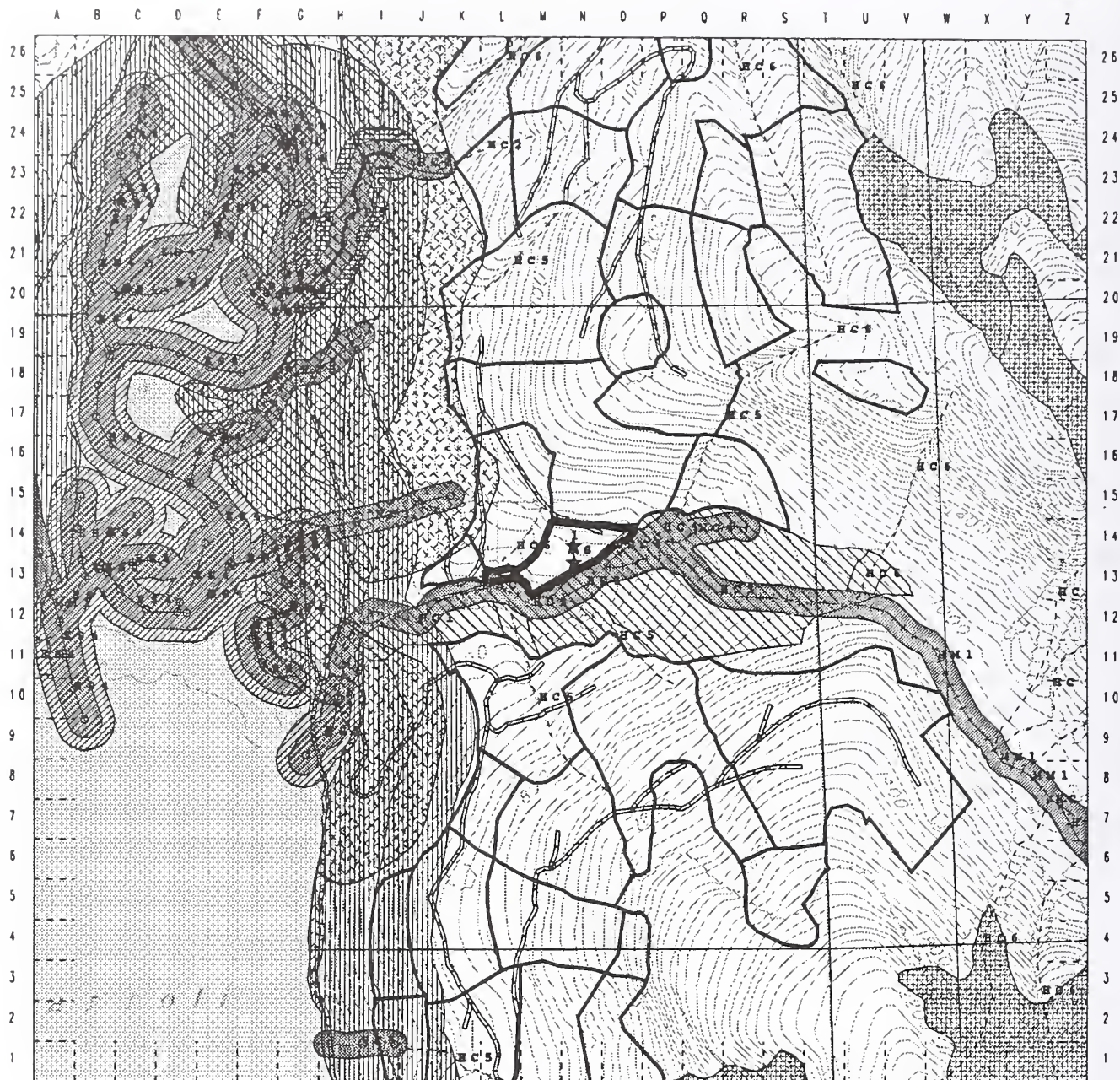
No concerns. NRB 8/30/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 358 DEIS# 40

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/drillcard/dcl095 nmi



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- ○ ○ Class 1 Stream
- — — Class 2 Stream
- — — Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Setting Line
- Other UC DEIS Unit Boundary
- Contour or Ortho Line

- ▨ Beach or Estuary Buffer
- ▨ Private Land
- ▨ No Cut Buffer
- ▨ Partial or Selective Harvest Buffer
- ▨ Riparian Soil Buffer
- ▨ No Programmed Harvest Buffer
- ▨ Body of Water
- ▨ Prior Harvest
- ▨ Mass Movement Indar 4 Soil

- Volc 4 - 0
- Volc 5 - 0
- Volc 6 - 6.8
- Volc 7 - 0
- Total Area - 6.8
- Potential MRF - 305.1
- Overlaid Quad - KTHC5NE
- VCU Number - 744
- Photo Number - 1673-160
- Alternative Pattern - 000050
- * Landing

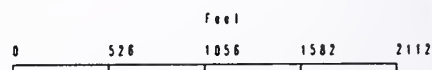
LOGGING SYSTEMS Abbrev.

- RS Running Skyline
- HE Helicopter
- HL High Lead
- SL Slack Line
- SH Shovel Yarding

Projection - Stereographic



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 41 Planned Acres: 15.1 Estimated Volume: 600.9 In Alternatives: 2, 3, 0, 5
 Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1673-160 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 359 Original LSTA Unit: 744-359

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 12.9 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 12.9 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 15.2 Not Seen 0.0 Primary VOO: PR Recreation: RM
 Mass movement index: Low 0.0 Medium 0.0 High 15.1 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The east central part of this unit is made up of a small area, about 2 acres, of very high landslide potential soils. MMI=4 (BMP 13.5). Recommend dropping this part of the unit. Much of the rest of the unit has a high potential for landslides, MMI=3. Recommend at least partial log suspension during yarding to minimize soil disturbance (BMP 13.9). Road construction through this unit will require some full bench construction, with end haul and disposal of overburden (BMPs 14.7, 14.12). Recommend disposal area to the south, above the next road junction.

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Northeastern portion of planned unit may become a blind lead depending on final road location. Verify feasibility of providing suspension requirements (see soils input) in relation to final road location and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste material. (BMP 14.7)
 Pink/Chum timing (June 1 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

The southern unit boundary is adjacent to a Class II TTRA stream and will require a minimum 100 foot buffer (BMP 12.6a). One water quality stream flows through the south-central part of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll estuary. Identified VOO is partial retention. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/29/95

SILVICULTURE INPUT

Highly productive with small areas of high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (3 acres). Consider shelterwood system to alleviate soil concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 359 DEIS# 41

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/staff/uc/draftcard/dcl095 aml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream



Class 2 Stream



Class 3 Stream



Section Line



Planning Roads



Unit Boundary



Setting Line



Other UC DEIS
Unit Boundary
Contour or Ortho
Line



Beach or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index 4 Soil

Volc 4 - 0

Volc 5 - 0

Volc 6 - 12.9

Volc 7 - 0

Total Acres - 15.1

Potential MBR - 600.9

Quarter Quad - KTHCSHE

VCU Number - 744

Photo Number - 1673-160

Alternative Pattern - 023050

* Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Stock Line

SH Shovel Yarding

Projection - Stolephone



Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 42 Planned Acres: 35.1 Estimated Volume: 1,549.0 In Alternatives: 0, 0, 0, 0
 Silvicultural System: Clearcut Settings: 3 Quad: KTNC5NE Photo: 1673-160 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 360 Original LSTA Unit: 744-360

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 32.9 Spruce 0.0 Mixed Hem/Spr 1.3 Nonforested 0.0 Aspect: S
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 34.2 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 35.2 Not Seen 0.0 Primary VQO: M Recreation: SPNM
 Mass movement index: Low 0.0 Medium 0.0 High 35.1 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 56% Martin- 56% Otter- 0% Eagle- 0% Black Bear- 56%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Some of the upper slopes in this unit have a high potential for landslides, MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). Present road design avoids these slopes (BMP 14.7). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Northeastern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

No fisheries concerns. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. 8/29/95

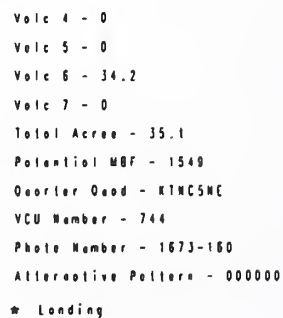
SILVICULTURE INPUT

Highly productive with good natural regeneration. No concerns. CBG 10/16/95

Wopscote 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/uc/draft/cwd/dcl095.aml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



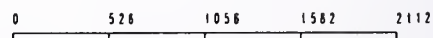
RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stotoplane



Eagle Nest

Fest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 43 Planned Acres: 31.6 Estimated Volume: 1,334.4 In Alternatives: 0, 3, 4, 0
 Silvicultural System : Clearcut Settings: 2 Quad: KTN5NE Photo: 1673-161 Logging systems: RS SL
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 362 Original LSTA Unit: 744-362

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 29.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 29.1 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 31.6 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 0.0 High 31.6 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 63% Martin- 63% Otter- 0% Eagle- 0% Black Bear- 63%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit contains soils that have a high potential for landslides (BMP 13.5). Recommend at least partial suspension when yarding (BMP 13.9). Roads on these soils may require full-bench construction (BMP 14.7). Over burden should be end-hauled and disposed of near the south end of Harvest Unit 359 (BMP 14.12). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Slackline. Confirm final road and landing locations. Eastern portion of planned unit appears to be a blindlead. Upper road/landings maybe needed to yard. Full suspension is required across Class III stream in Western portion of unit. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

There is a Class III stream flowing through the northwest part of the unit. Recommend that yarding be split on this stream and that full suspension be maintained when yarding across the stream.

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll estuary. Identified VQO is modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

Unit contains several V-notches or incised drainages. Recommend that yarding be split on these V-notches and that any trees within the V-notch be retained (BMP 13.16). NRB 8/29/95

SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Plant using Alaska yellow cedar if available. (3 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 362 DKIS# 43

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/uc/drulicard/dc1095 amf



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards

	Class 1 Stream		Beech or Betuery Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Fertiel or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DKIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 0
Volc 6 - 29.1
Volc 7 - 0
Total Acres - 31.6
Potential MBF - 1334.4
Quarter Quad - KTNCSNE
VCU Number - 744
Photo Number - 1673-161
Alternative Pattern - 003400
★ Landing

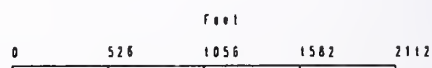
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 44 Planned Acres: 7.1 Estimated Volume: 321.0 In Alternatives: 0, 0, 0, 0
 Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1673-161 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 363 Original LSTA Unit: 744-363

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 7.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 7.1 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 7.1 Not Seen 0.0 Primary VQO: PR Recreation: RM
 Mass movement index: Low 0.0 Medium 0.0 High 7.1 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of high landslide potential soils. MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Class III stream in North portion of unit will require full suspension. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
 Coho/Pink/Chum timing (June 15 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

One water quality stream flows through the northern tip of this unit. (BMP 12.6a). SPL i/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9). trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll estuary. Identified VQO is partial retention. Beach, estuary and older second growth stands will help screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

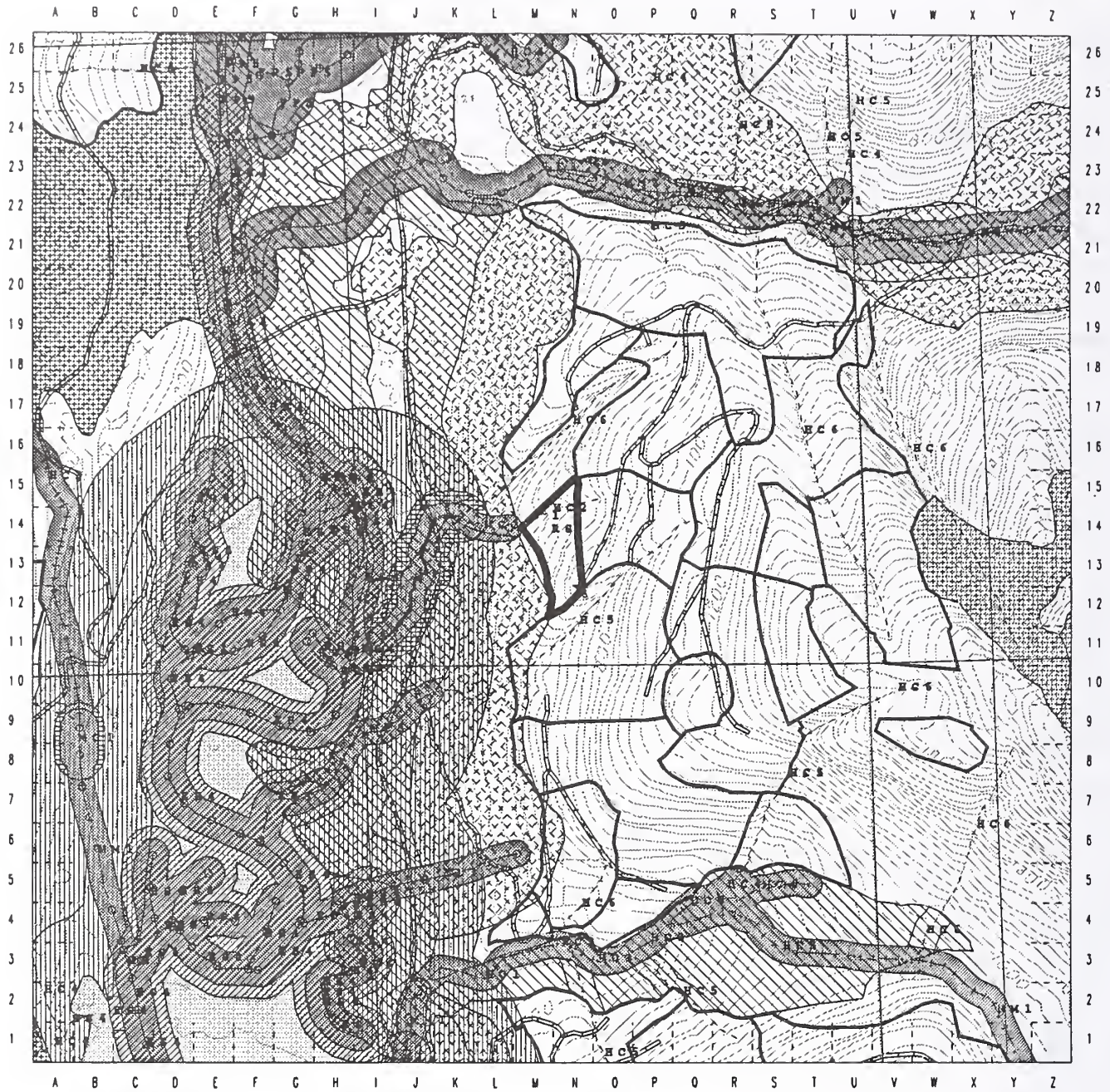
V-notch runs through the middle of this unit (N-13 to M-13). Recommend split yarding, retain trees within the V-notch and provide a windfirm buffer along the edges (BMP 13.16). NRB 8/29/95

SILVICULTURE INPUT

Highly productive with good natural regeneration. No concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 363 DEIS# 44

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/uc/draftcard/dc1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

LOGGING SYSTEMS Abbrev.

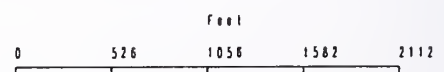
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 0
Volc 5 - 0
Volc 6 - 7.1
Volc 7 - 0
Total Acres - 7.1
Potential MBF - 321
Quarter Dead - KTHCSNE
VCU Number - 744
Photo Number - 1673-181
Alternative Pattern - 000000
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 45 Planned Acres: 16.8 Estimated Volume: 756.9 In Alternatives: 0, 0, 4, 0
 Silvicultural System: Clearcut Settings: 3 Quad: KTNC5NE Photo: 1673-161 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 364 Original LSTA Unit: 744-364

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 16.8 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 16.8 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 16.8 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 0.0 High 16.8 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). NRB 8/29/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit contains two Class III water quality streams. Recommend that yarding be split on these streams and that full suspension be maintained when yarding across the stream (BMP 13.9). SPL 1/3/95 NRB 8/29/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll Inlet. Identified VQO is modification. Uncut stands if the foreground will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/29/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

V-notch runs through the middle of this unit (N-15 to L-13). Recommend split yarding, retain trees within the V-notch and provide a windfirm buffer along the edges (BMP 13.16). Road construction across this V-notch may require the end-haul and disposal of waste material (BMP 14.12). NRB 8/29/95

SILVICULTURE INPUT

Moderate productivity with small areas of high mass movement potential and hydric soils. Plant approx 3 acres. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 364 DEIS# 45

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/ac/grulicard/dc1095 awl



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

<ul style="list-style-type: none"> Class 1 Stream Class 2 Stream Class 3 Stream Section Line Planning Board Unit Boundary Settling Line Other UC DEIS Unit Boundary Contour or Ortho Line 	<ul style="list-style-type: none"> Beach or Estuary Buffer Private Land No Cut Buffer Partial or Selective Harvest Buffer Riparian Soil Buffer No Programmed Harvest Buffer Body of Water Prior Harvest Mass Movement Index 4 Soil 	<ul style="list-style-type: none"> Volc 4 - 0 Volc 5 - 0 Volc 6 - 16.8 Volc 7 - 0 Total Acres - 16.8 Potential MBF - 756.9 Quarter Quad - KTNCSNE VCU Number - 744 Photo Number - 1673-161 Alternative Pattern - 000400 * Landing
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LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane

Eagle Nest

Feet
0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 46 Planned Acres: 35.3 Estimated Volume: 1,571.6 In Alternatives: 0, 0, 0, 0
 Silvicultural System : Clearcut Settings: 4 Quad: KTNC5NE Photo: 1673-161 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 365 Original LSTA Unit: 744-365

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 33.4 Spruce 0.0 Mixed Hem/Spr 1.9 Nonforested 0.0 Aspect: N
 Volume class breakdown: Class 4: 0.0 Class 5: 1.9 Class 6: 33.4 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 13.3 Not Seen 22.0 Primary VQO: MM Recreation: RM
 Mass movement index: Low 0.0 Medium 11.5 High 23.8 Very High 0.0 Wetland 11.5 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

High landslide potential soils, MMI=3, are located on the sides of the ridges (K-11, M-14, N-13, P-13) (BMP 13.5).
 Recommend that yarding on these sideslopes provide at least partial log suspension (BMP 13.9). NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
 North and South portions of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

There is on e water quality stream flowing through the center (N-12 to M-16) of the unit (BMP 12.6). SPL 1/3/95
 Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16).
 Variable width slope-break buffers may also be required for water quality stream adjacent to northeast boundary. (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Potion of unit may be seen from Carroll estuary. Identified VQO is maximum modification.

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

A V-notch runs through the middle of this harvest unit (N-12 to M-16) (BMP 13.5). Recommend that a windfirm buffer be retained along this V-notch and that yarding be split on it (BMPs 13.9, 13.16). Road construction across this V-notch will require full bench design, with end-haul and disposal of overburden (BMP 14.7). Overburden might be disposed along the turn in the road in the middle of the unit (L-14) (BMP 14.12). NRB 8/30/95

SILVICULTURE INPUT

High productivity with good natural regeneration. No concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 365 DEIS# 46

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draftcard/dc1095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

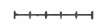


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

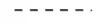
Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream



Class 2 Stream



Class 3 Stream



Section Line



Planning Roads



Unit Boundary



Setting Line



Other UC 0818 Unit Boundary



Contour or Ortho Line



Beach or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index 4 Soil

Volc 4 - 0

Volc 5 - 1.9

Volc 6 - 33.4

Volc 7 - 0

Total Acres - 35.3

Potential MBF - 1571.6

Quarter Quad - KINCONE

VCU Number - 744

Photo Number - 1673-161

Alternative Pattern - 000000

* Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Stack Line

SH Shovel Yarding

Projection - Stateplane



Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 47 Planned Acres: 25.2 Estimated Volume: 1,134.8 In Alternatives: 2, 3, 0, 5
 Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1673-161 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 366 Original LSTA Unit: 744-366

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 25.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: NW
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 25.2 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 25.1 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 0.7 High 24.5 Very High 0.0 Wetland 0.7 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The north end of the unit (N-15) contains some high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

There is one water quality stream flowing through the northwest part of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen Carroll Inlet. Identified VQO is modification. Uncut timber will help to screen unit WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

V-notch along the nw side of this unit (M-14 to J-12). Recommend retaining a wind-firm buffer along the edge of this V-notch (BMP 12.6a and 13.16). NRB 8/30/95

SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (3 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 366 DEIS# 47

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draftcard/dcl095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

Class 1 Stream Class 2 Stream Class 3 Stream Section Line Planning Road Unit Boundary Settling Line Other UC OSIS Unit Boundary Contour or Ortho Line	Beach or Estuary Buffer Private Land No Cut Buffer Partial or Selective Harvest Buffer Riparian Soil Buffer No Programmed Harvest Buffer Body of Water Prior Harvest Woods Movement Index 4 Soil	Volc 4 - 0 Volc 5 - 0 Volc 6 - 25.2 Volc 7 - 0 Total Acres - 25.2 Potential MBF - 1134.8 Quarter Quad - KTNCSNE VCU Number - 744 Photo Number - 1673-161 Alternative Pattern - 023050 ★ Landing
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LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Slack Line

SH Shovel Yarding

Projection - Stateplane

Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 48 Planned Acres: 11.7 Estimated Volume: 527.5 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-2 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 367 Original LSTA Unit: 744-367

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 11.7 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 11.7 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 11.8 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 8.4 High 3.4 Very High 0.0 Wetland 8.4 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
 Southern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

There is one water quality stream flowing adjacent to the south part of this unit (N-13 to K-11) and directly into a
 Class I fish stream (BMP 12.6). A slope break buffer may be required (BMPs 12.6a, 13.16). SPL 1/3/95 NRB 8/30/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit located on lower slope. May be seen from Carroll Inlet. Identified VQO is modification. Beach and
 estuary buffer will help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

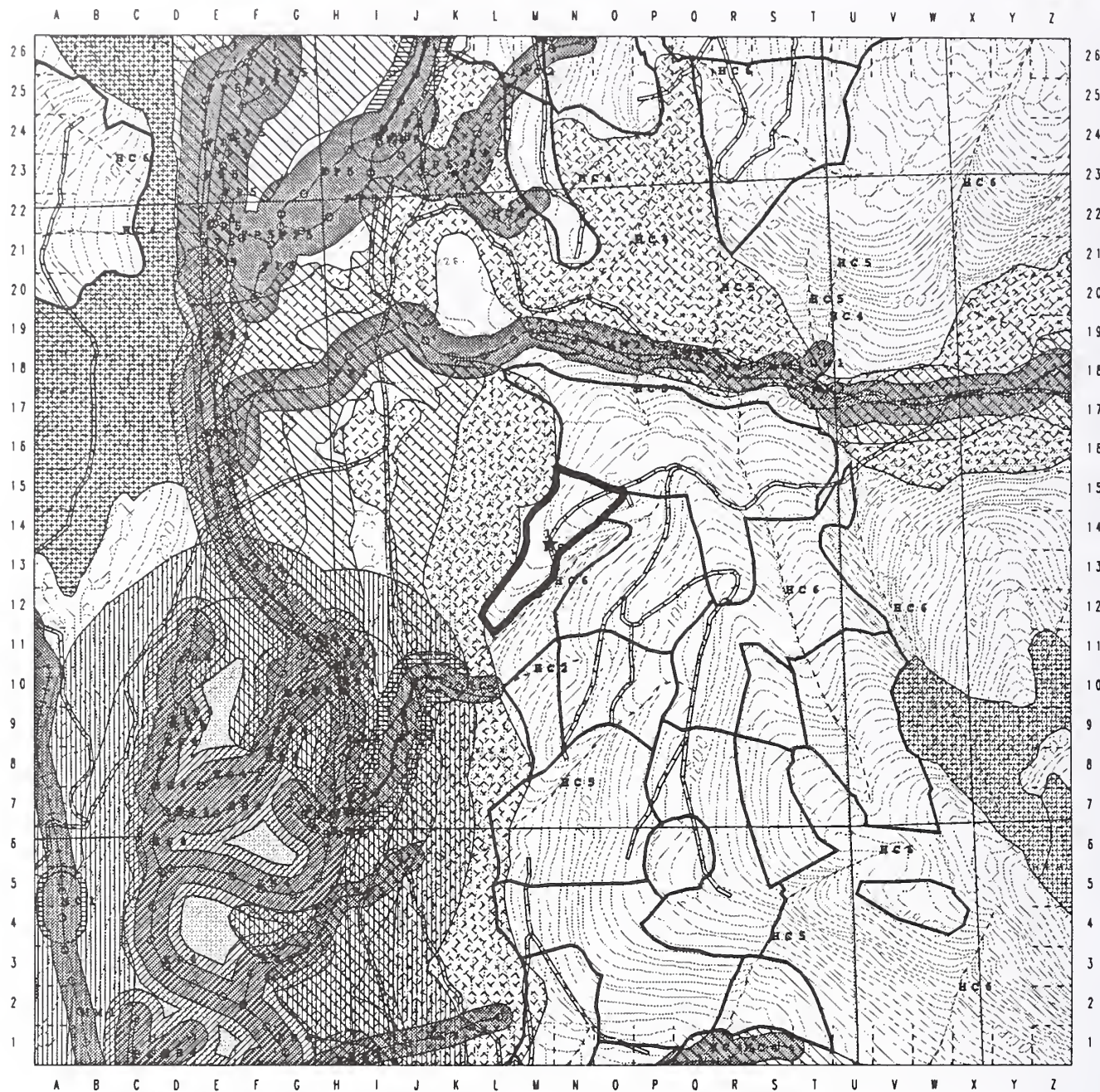
V-notch along the south unit boundary (N-14 to J-11). Recommend wind-firm slope break buffer along this V-notch (BMP
 13.16). NRB 8/30/95

SILVICULTURE INPUT

Moderate productivity with good natural regeneration. No concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 367 DEIS# 48

Mopscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/druticard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Road
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 0
Volc 6 - 11.7
Volc 7 - 0
Total Acres - 11.7
Potential MBF - 527.5
Quarter Quad - KTHC5NE
VCU Number - 744
Photo Number - 1890-2
Alternative Pattern - 020050
* Logging

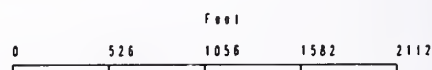
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 49 Planned Acres: 54.0 Estimated Volume: 2,379.7 In Alternatives: 2, 3, 4, 5
 Silvicultural System : Clearcut Settings: 4 Quad: KTNC5NE Photo: 1673-161 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 368 Original LSTA Unit: 744-368

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 50.8 Spruce 0.0 Mixed Hem/Spr 2.4 Nonforested 0.0 Aspect: N
 Volume class breakdown: Class 4: 0.0 Class 5: 2.4 Class 6: 50.8 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 15.4 Not Seen 38.6 Primary VQO: MM Recreation: RM
 Mass movement index: Low 0.0 Medium 12.9 High 41.1 Very High 0.0 Wetland 12.9 Mix Wetland 0.0
 % of High Value Habitat: Deer- 74% Martin- 74% Otter- 0% Eagle- 0% Black Bear- 74%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

North side of unit (J-16 to Q-15) consists of an extremely steep and potentially unstable, MMI=4, stream gorge which should not be included in the proposed harvest unit. Recommend that the lower unit boundary be located at the top of this slope break (BMP 13.5). East (P-14) and west (J-16) ends of this unit contain high landslide potential soils (BMP 13.5). Recommend at least partial log suspension when yarded (BMP 13.9). Small area, 2 to 3 acres of forested wetland and open muskeg is located in the east central (L-15) part of the unit (BMP 12.5). This area is suitable for shovel logging (BMP 13.9). NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Northern portion of planned unit is adjacent to a Class I/II stream with associated gorge. Determine feasibility of tying across TTRA buffer (need Stream Protection Plan) to include some or all of area adjacent to gorge. Modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)
 Coho/Pink/Chum timing (June 1 - August 15) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

The northern unit boundary is parallel to reaches of Class I and II stream habitat that will require a 100 foot TTRA buffer (BMPs 12.6, 12.6a and 13.16). There are two water quality streams flowing through this unit (M-15 and P-14) (BMP 12.6). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres of harvest. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

Small portion of unit can be seen from Carroll estuary. Identified VQO is maximum modification. Adjacent uncut timber will help screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

V-notch located in the east part (P-13 to Q-15) of this unit. Recommend a wind-firm slope break buffer be maintained on this V-notch (BMP 13.16). NRB 8/30/95

SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Plant using Alaska yellow cedar if available. (10 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 368 DEIS# 49

Mopscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/ac/draftcard/dcl095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Setting Line
- other UC DEIS Unit Boundary
- Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 2.4
Volc 6 - 50.8
Volc 7 - 0
Total Acres - 54
Potential MBF - 2379.7
Deerler Quad - KINC5NE
VCU Number - 744
Photo Number - 1673-161
Alternative Pattern - 023450
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 50 Planned Acres: 12.1 Estimated Volume: 388.8 In Alternatives: 0, 0, 4, 0
 Silvicultural System : Clearcut Settings: 2 Quad: KTNC5NE Photo: 1573-162 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 370 Original LSTA Unit: 744-370

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 11.0 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 11.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 11.4 Not Seen 0.7 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 1.1 High 11.0 Very High 0.0 Wetland 1.1 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is bordered by a TTRA Class I stream to the north and contains a TTRA Class II stream that flows west through the center of the unit (BMP 12.6). Both streams will require a minimum 100 foot buffer (BMPs 12.6a). SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Adjacent second growth and stream buffers will help to screen unit which is low on the hillside. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/30/95

SILVICULTURE INPUT

High productivity with good natural regeneration. Prescriptions should address partial cut stream buffer. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 370 DEIS# 50

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/staff/uc/draftcard/dcl095 eml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		No Cut Buffer
	Class 2 Stream		Partial or Selective Harvest Buffer
	Class 3 Stream		Riparian Soil Buffer
	Section Line		No Programmed Harvest Buffer
	Planning Roads		Body of Water
	Unit Boundary		Prior Harvest
	Setting Line		Mass Movement Index 4 Soil
	Other DC DEIS Unit Boundary		
	Contour or Ortho Line		

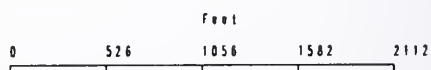
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Volc 4 - 0
Volc 5 - 11
Volc 6 - 0
Volc 7 - 0
Total Acres - 12.1
Potential MBF - 388.8
Quarter Quad - KTHCSWE
VCU Number - 744
Photo Number - 1573-162
Alternative Pattern - 000400
★ Landing



Eagle Nest



Projection - Stateplane

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 51 Planned Acres: 32.3 Estimated Volume: 1,082.6 In Alternatives: 2, 3, 4, 0
 Silvicultural System: Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-48 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 371 Original LSTA Unit: 744-371

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 20.9 Spruce 0.0 Mixed Hem/Spr 10.1 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 31.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.9
 Archeology 0-100: 0.0 100-200: 0.0 Seen 32.0 Not Seen 0.3 Primary VOO: M Recreation: SPNM
 Mass movement index: Low 29.3 Medium 3.0 High 0.0 Very High 0.0 Wetland 3.4 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Much of the unit includes extremely steep, shallow, potentially unstable soils, MMI=4, that are physically unsuited for commercial forest production (BMP 13.5). Recommend that this unit be dropped from consideration in any alternatives (BMP 13.1). NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Southern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit contains water quality streams that flow downstream into resident and anadromous fish habitat (BMP 12.6). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll estuary. Identified VOO is modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

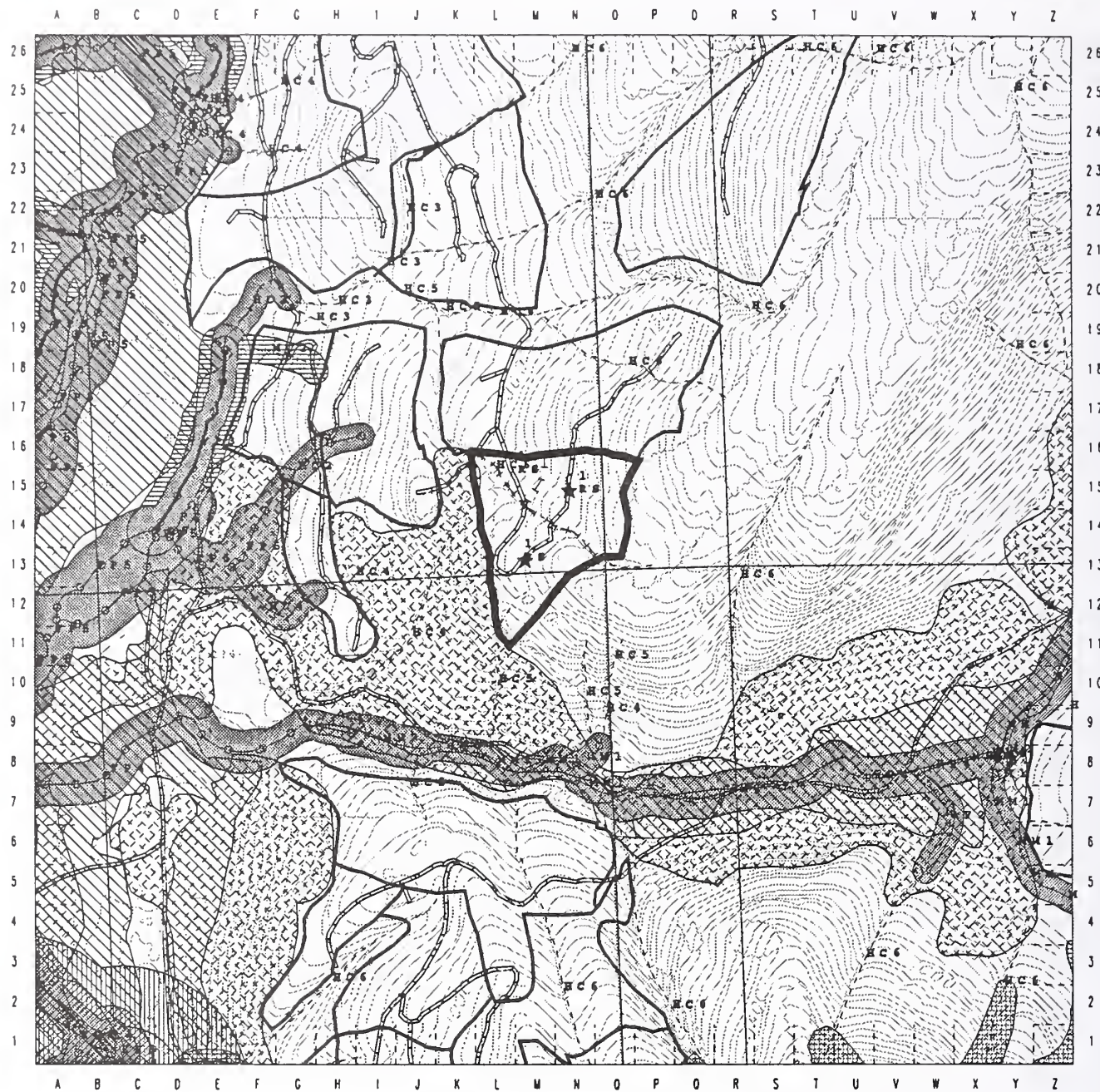
Very high landslide potential, MMI=4. See Soils Input. NRB 8/30/95

SILVICULTURE INPUT

Highly productive with areas of high elevation and high mass movement soils. Regeneration of much of unit will be difficult due to steep, shallow soils. Recommend application of shelterwood system leaving all trees 13" DBH and under standing. If clearcut unit will require planting. CBG 10/16/95

Upper Carroll study Area Unit Schematic - Unit 371 DEIS# 51

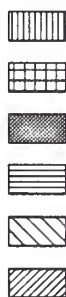
Mopscle 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stell/oc/draftcard/oc1095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Road
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Wettery Buffer
Private Land
No cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 31
Volc 6 - 0
Volc 7 - 0
Total Acres - 32.3
Potential MBF - 1082.6
Overlaid Quad - K1NC5MC
VCU Number - 744
Photo Number - 1890-48
Alternative Pattern - 02J400
★ Logging

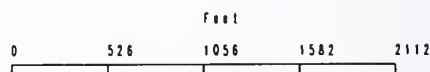
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 52 Planned Acres: 47.8 Estimated Volume: 1,688.8 In Alternatives: 2, 0, 0, 0
 Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-48 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 372 Original LSTA Unit: 744-372

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 24.3 Spruce 0.0 Mixed Hem/Spr 22.6 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 41.0 Class 6: 5.9 Class 7: 0.0 Low Productive 0.9
 Archeology 0-100: 0.0 100-200: 0.0 Seen 47.9 Not Seen 0.0 Primary VQO: M Recreation: SPNM
 Mass movement index: Low 28.7 Medium 19.2 High 0.0 Very High 0.0 Wetland 22.2 Mix Wetland 0.0
 % of High Value Habitat: Deer- 83% Martin- 83% Otter- 0% Eagle- 0% Black Bear- 83%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit includes forested wetlands (BMP 12.5). Recommend at least partial log suspension when yarded (BMP 13.9).

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Northeastern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

This unit contains water quality streams that flow downstream into resident and anadromous fish habitat (BMP 12.6). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll estuary. Identified VQO is modification. Adjacent uncut timber will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/30/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

V-notch located along north unit boundary (J-15 to Q-15). Recommend wind-firm slope break buffer be retained to protect this V-notch (BMPs 12.6a, 13.16). A road across this V-notch will require some full-bench construction and end-haul of overburden (BMPs 14.7, 14.12). NRB 8/30/95

SILVICULTURE INPUT

Moderately productive with small areas of high elevation and high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (5 acres) CBG 10/16/95

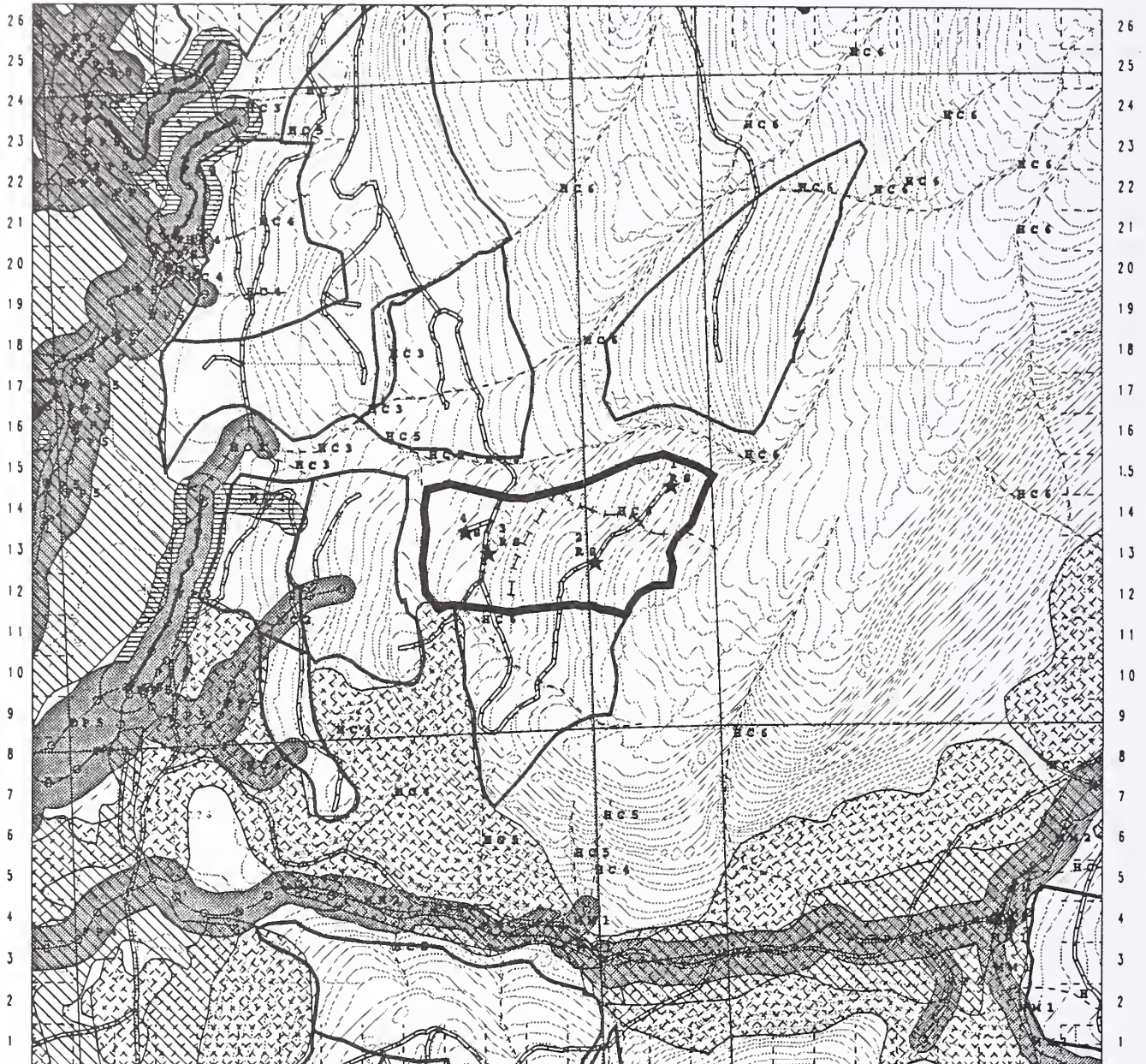
Upper Carroll Study Area Unit Schematic - Unit 372 DEIS# 52

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /w00/staff/uc/draftcard/dc1095 aml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 stream
Class 2 stream
Class 3 stream
Section line
Planning roads
Unit boundary
Setting line
Other UC DEIS Unit boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No cut buffer
Partial or selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Inher & Soil

Volc 4 - 0
Volc 5 - 41
Volc 6 - 5.9
Volc 7 - 0
Total Acres - 47.8
Potential MBF - 1688.8
Quarter Oad - KINCSHE
VCU Number - 744
Photo Number - 1890-48
Alternative Pattern - 020000
★ Landing

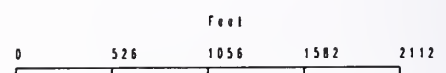
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 53 Planned Acres: 33.4 Estimated Volume: 764.0 In Alternatives: 2, 0, 4, 0
Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-47 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 375 Original LSTA Unit: 744-375

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 24.9 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 24.4 Class 5: 0.5 Class 6: 0.0 Class 7: 0.0 Low Productive 8.5
Archeology 0-100: 0.0 100-200: 0.0 Seen 33.4 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 33.4 Medium 0.0 High 0.0 Very High 0.0 Wetland 33.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 59%

Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists sub-alpine ecosystem, mountain hemlock plant series, low-productivity sites. Regeneration may be damaged by heavy snowpack. South part of unit (M-12, M-13) is made up of high landslide potential soils (BMP 13.5). Recommend at least partial log suspension on this setting (BMP 13.9). Central part of unit (M-14) includes wetland (BMP 12.5). Recommend at least partial log suspension when yarding this setting (BMP 13.9). North end of unit (O-17) includes very high landslide potential soils, MMI=4. Recommend that the north part of this setting be dropped from Harvest Unit 53 (BMP 13.5). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

This unit contains a water quality stream (N-12 to K-12) that flows downstream into resident and anadromous fish habitat. SPL 1/3/95 Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Adjacent uncut standing timber will help screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

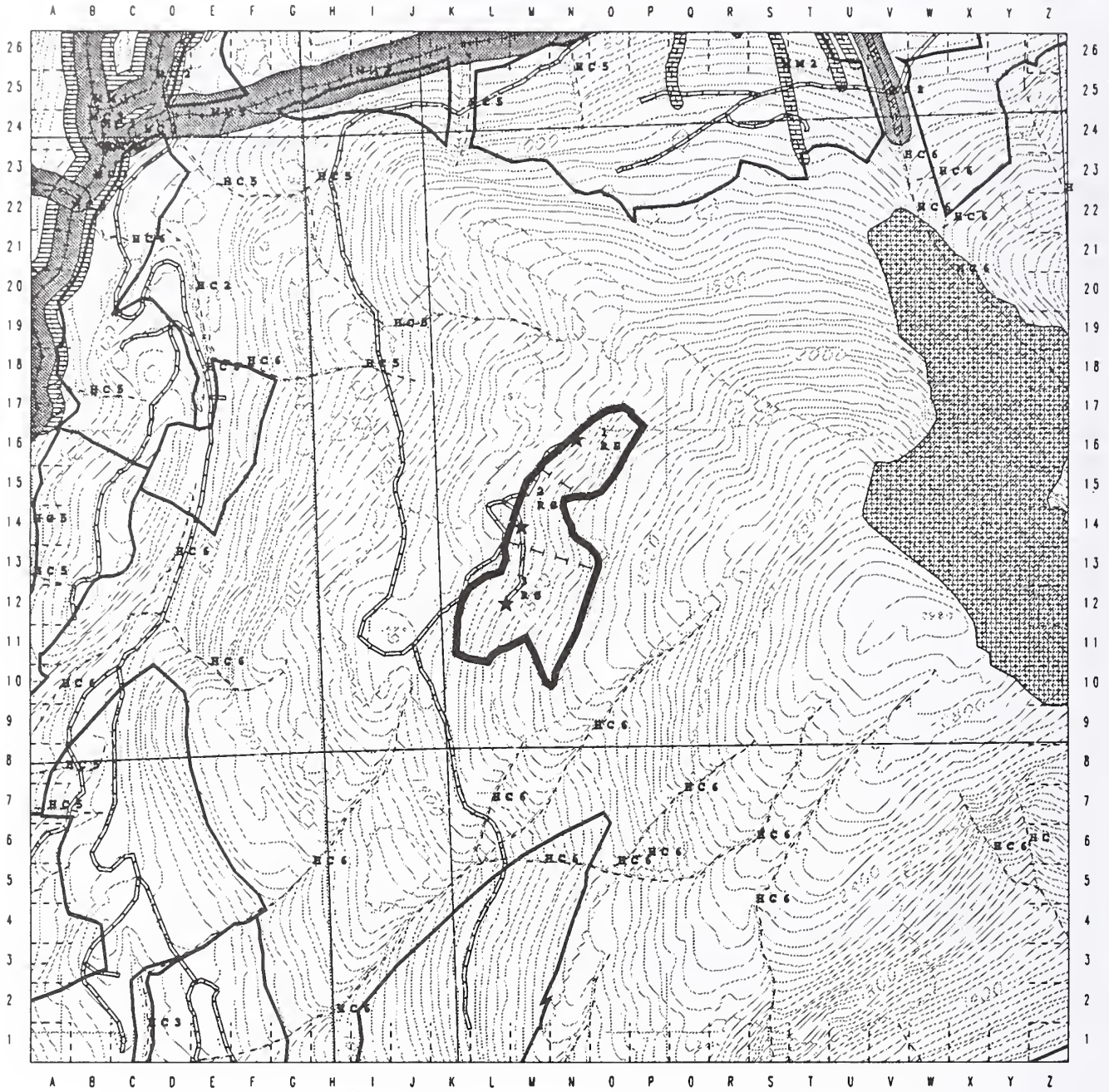
No concerns. NRB 8/31/95

SILVICULTURE INPUT

Low productivity with areas of high elevation and high mass movement soils. Planting will be required, using Alaska yellow cedar and high elevation sitka Spruce. (6 acres) CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 375 DEIS# 53

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/stall/uc/drollcard/dc1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

LOGGING SYSTEMS Abbrev.

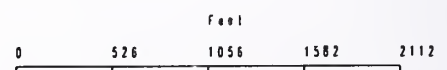
RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 24.4
Volc 5 - 0.5
Volc 6 - 0
Volc 7 - 0
Total Acres - 33.4
Potential MBF - 764
Quarter Quad - K1NC4NW
VCU Number - 744
Photo Number - 1890-47
Alternative Pattern - 020400
★ Logging



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 54 Planned Acres: 35.5 Estimated Volume: 1,225.6 In Alternatives: 0, 0, 0, 0
Silvicultural System : Clearcut Settings: 4 Quad: KTNC4NW Photo: 1573-162 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 376 Original LSTA Unit: 744-376

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)
Forest type: Cedar 0.0 Hemlock 21.7 Spruce 0.0 Mixed Hem/Spr 13.8 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 0.0 Class 5: 35.5 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 35.5 Not Seen 0.0 Primary VQ0: M Recreation: SPNM
Mass movement index: Low 31.7 Medium 0.0 High 3.8 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential.

FISH/WATERSHED INPUT

This unit contains several water quality streams that flow downstream into resident and anadromous fish habitat (BMP 12.6). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll inlet. Identified VQ0 is modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

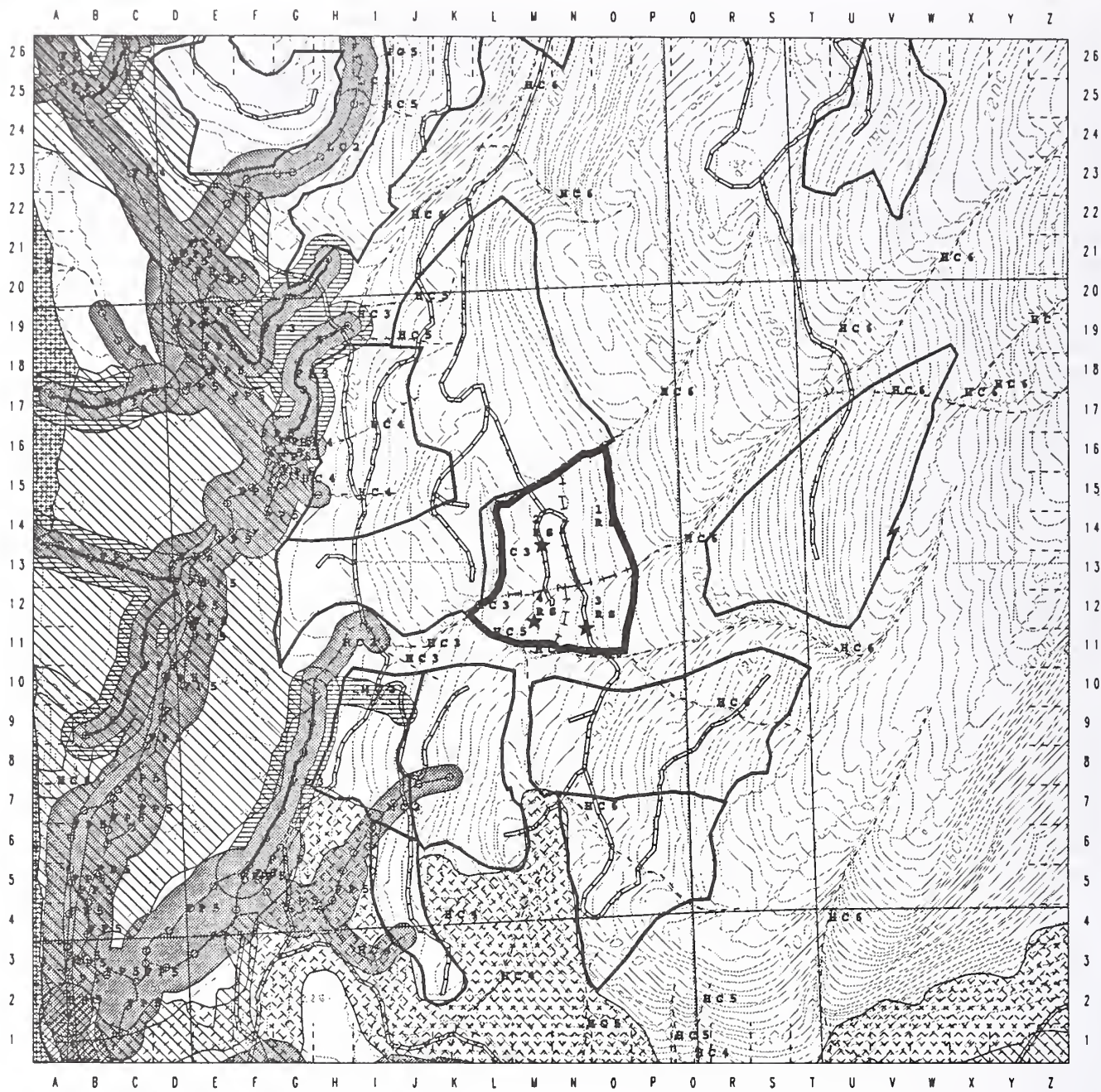
No concerns. 8/31/95

SILVICULTURE INPUT

High productivity with good natural regeneration. No concerns. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 376 DEIS# 54

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s/DK/staff/ac/draft/cad/dcl095 amf



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other DC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 35.5
Volc 6 - 0
Volc 7 - 0
Total Acres - 35.5
Potential MBF - 1225.6
Quarter Oad - KINCSE
VCU Number - 744
Photo Number - 1573-162
Alternative Pattern - 000000
★ Landing

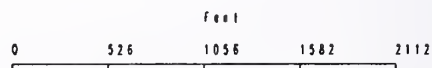
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 55 Planned Acres: 18.1 Estimated Volume: 613.2 In Alternatives: 2, 3, 4, 5
 Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1573-162 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 378 Original LSTA Unit: 744-378

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 17.6 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 17.6 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 7.5 Not Seen 10.7 Primary VQO: MM Recreation: RM
 Mass movement index: Low 0.0 Medium 10.2 High 7.9 Very High 0.0 Wetland 10.2 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit contains Class I and II streams that will require 100 foot TTRA buffers (BMP 12.6a). There are also two water quality streams that flow through the northeast corner of the unit (BMP 12.6). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Portion of unit may be seen from Carroll Inlet. Identified VQO is maximum modification. Unit is located low on the the slope and stream buffers will help to screen unit.

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

Highly productive with small areas of Hydric soils that will need to be planted. (6 acres)
 Setting 1 contains a partial cut stream buffer. Prescription will need to identify tree marking guides. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 378 DEIS# 55

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/uc/draft/cord/dcl095 nml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

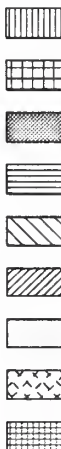


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 17.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 18.1
Potential MBF - 613.2
Overlaid Quad - K1NCSNE
VCU Number - 744
Photo Number - 1573-162
Alternative Pattern - 023450
★ Landing

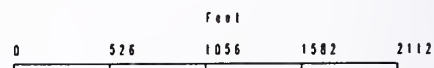
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 56 Planned Acres: 33.1 Estimated Volume: 1,143.7 In Alternatives: 0, 0, 0, 0
 Silvicultural System: Clearcut Settings: 6 Quad: KTNC5NE Photo: 1573-162 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 380 Original LSTA Unit: 744-380

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 4.9 Spruce 0.0 Mixed Hem/Spr 28.2 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 33.1 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 9.7 Not Seen 23.4 Primary VQO: MM Recreation: SPNM
 Mass movement index: Low 1.6 Medium 9.9 High 21.6 Very High 0.0 Wetland 15.3 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Northwest corner of the unit contains a small, open muskeg (BMP 12.5). Road construction should avoid this area if possible (BMP 14.2). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Adjust western unit boundary to reflect updated stream buffers.

ENGINEERING INPUT

Road construction to avoid open muskeg if possible. (BMP 14.2)
 Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

The western boundary of this unit is adjacent to two active floodplain channels (BMP 12.4). In addition, the unit contains two water quality streams that will require split yarding and/or full suspension (BMP 13.9). Due to the extensive fish habitat it is recommended this unit be dropped or protected with a buffer in excess of 200 feet (BMP 12.6a). SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Portion of unit may be seen from Carroll Inlet. Identified VQO is maximum modification. Adjacent uncut timber will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

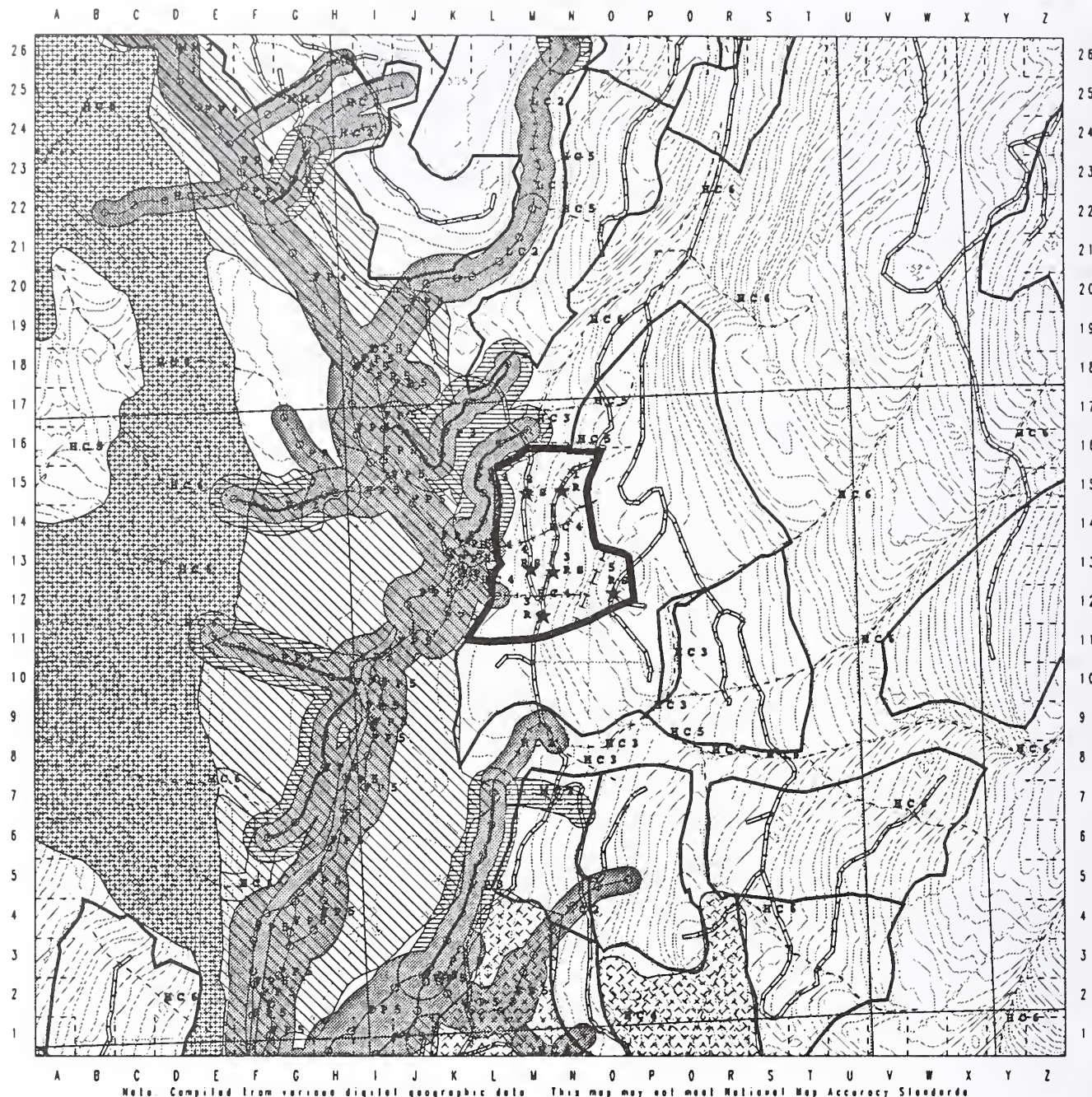
Unit is located next to the Carroll River floodplain (BMP 12.4). A Carroll River road crossing should be located in the narrowest, most stable site possible (BMP 14.2). Bridge abutments should be placed on stable upland locations, if possible and should be designed to pass at least a 50 year storm event (BMP 14.17). NRB 8/31/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres)
 Prescription should address partial cut stream buffer. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 380 DEIS# 56

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draftcard/dcl095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 33.1
Volc 6 - 0
Volc 7 - 0
Total Acres - 33.1
Potential MBF - 1143.7
Quarter Quad - KINC5NE
VCU Number - 744
Photo Number - 1573-162
Alternative Pattern - 000000
* Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stollplane



Eagle Head

Feet
0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 57 Planned Acres: 36.8 Estimated Volume: 1,242.1 In Alternatives: 2, 3, 0, 5
 Silvicultural System: Clearcut Settings: 5 Quad: KTNC5NE Photo: 1890-5 Logging systems: LS RS SH
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 382 Original LSTA Unit: 744-382

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 35.7 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 0.0 Class 5: 35.7 Class 6: 0.0 Class 7: 0.0 Low Productive 1.2
 Archeology 0-100: 0.0 100-200: 0.3 Seen 0.0 Not Seen 36.8 Primary VQO: MM Recreation: SPNM
 Mass movement index: Low 8.3 Medium 24.6 High 3.9 Very High 0.0 Wetland 3.9 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline, Shovel, and Live Skyline. Confirm final road and landing locations. Setting #5 is primarily within a selective harvest buffer. ITM setting #5 and shovel yard or adjust unit boundary to exclude.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)
 Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is parallel to the Class I mainstem of Carroll River (BMP 12.6). Due to the incision depth, a buffer in excess of 100 feet may be required to provide protection (BMP 12.6a). The unit also contains two Class III water quality streams (BMP 12.6). SPL 1/3/95
 Due to temperature sensitivity concerns, all trees less than 12 inches DBH within 35 feet of class III streams will remain standing, or a windfirm buffer will be delineated.

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. 8/31/95

SILVICULTURE INPUT

Moderate productivity with good natural regeneration. Small pockets of hemlock dwarf mistletoe and Alaska yellow cedar decline should be included within harvest unit. Monitor for re-occurrence following harvest.
 Prescription should address partial cut stream buffer. CBG 10/16/95

Upper Carroll Study Area Unit Schematic - Unit 382 DEIS# 57

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/uc/draftcard/dc1095 aml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 58 Planned Acres: 17.7 Estimated Volume: 323.8 In Alternatives: 0, 3, 4, 5
Silvicultural System : Clearcut Settings: 2 Quad: KTNC5NE Photo: 1890-45 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 384 Original LSTA Unit: 744-384

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)
Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 6.5 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 0.0 Class 5: 6.5 Class 6: 0.0 Class 7: 0.0 Low Productive 11.2
Archeology 0-100: 0.0 100-200: 0.0 Seen 12.5 Not Seen 5.2 Primary VQO: M Recreation: SPNM
Mass movement index: Low 1.9 Medium 2.3 High 13.5 Very High 0.0 Wetland 1.9 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

This unit contains high landslide potential soils (BMP 13.5). Recommend that at least partial log suspension be achieved to minimize soil disturbance (BMP 13.9). The western edge of this unit (M-12 to M-14) is on the other side of the ridge from the proposed road and will result in a blind lead. Recommend that this area be dropped from this unit and included with Harvest Unit 385 (BMP 13.2). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Modify Western unit boundary if location is different than ridge top.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

This unit contains two water quality streams (BMP 12.6). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9). trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

Moderate productivity with areas of landslide potential. Plant 3 acres. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 304 DEIS# 50

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/staff/uc/draftcard/dcl095 aml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary Contour or Ortho Line



Beech or Wetland Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 0
Volc 5 - 6.5
Volc 6 - 0
Volc 7 - 0
Total Acres - 17.7
Potential MBF - 323.8
Quarter Quad - K1NCSNE
VCU Number - 744
Photo Number - 1890-45
Alternative Pattern - 003450
★ Logging

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplone



Eagle Nest

Feet
0 528 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 59 Planned Acres: 43.6 Estimated Volume: 411.9 In Alternatives: 2, 3, 4, 5
 Silvicultural System : Clearcut Settings: 6 Quad: KTNC5NE Photo: 1890-45 Logging systems: RS SH
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 385 Original LSTA Unit: 744-385

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 1.1 Nonforested 0.0 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 1.1 Class 6: 0.0 Class 7: 0.0 Low Productive 42.5
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 43.6 Primary VQO: MM Recreation: Pl
 Mass movement index: Low 9.5 Medium 33.7 High 0.3 Very High 0.0 Wetland 21.5 Mix Wetland 0.0
 % of High Value Habitat: Deer- 45% Martin- 45% Otter- 0% Eagle- 0% Black Bear- 45%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

East side (0-12) of the unit contains a small (less than 3 acre) area of high landslide potential soils (BMP 13.5).
 Recommend that at least partial log suspension be achieved in yarding (BMP 13.9). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Shovel. Confirm final road and landing locations. Southwestern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations. Relocate road to this unit to avoid small population of Chorís bog orchids.

FISH/WATERSHED INPUT

This unit is bordered by Class II fish habitat to the north and west (BMP 12.6). All Class II streams will require 100 foot TTRA buffers (BMP 12.6a). SPL 1/3/95

WILDLIFE INPUT

Relocate road to this unit to avoid small population of Chorís bog orchids.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

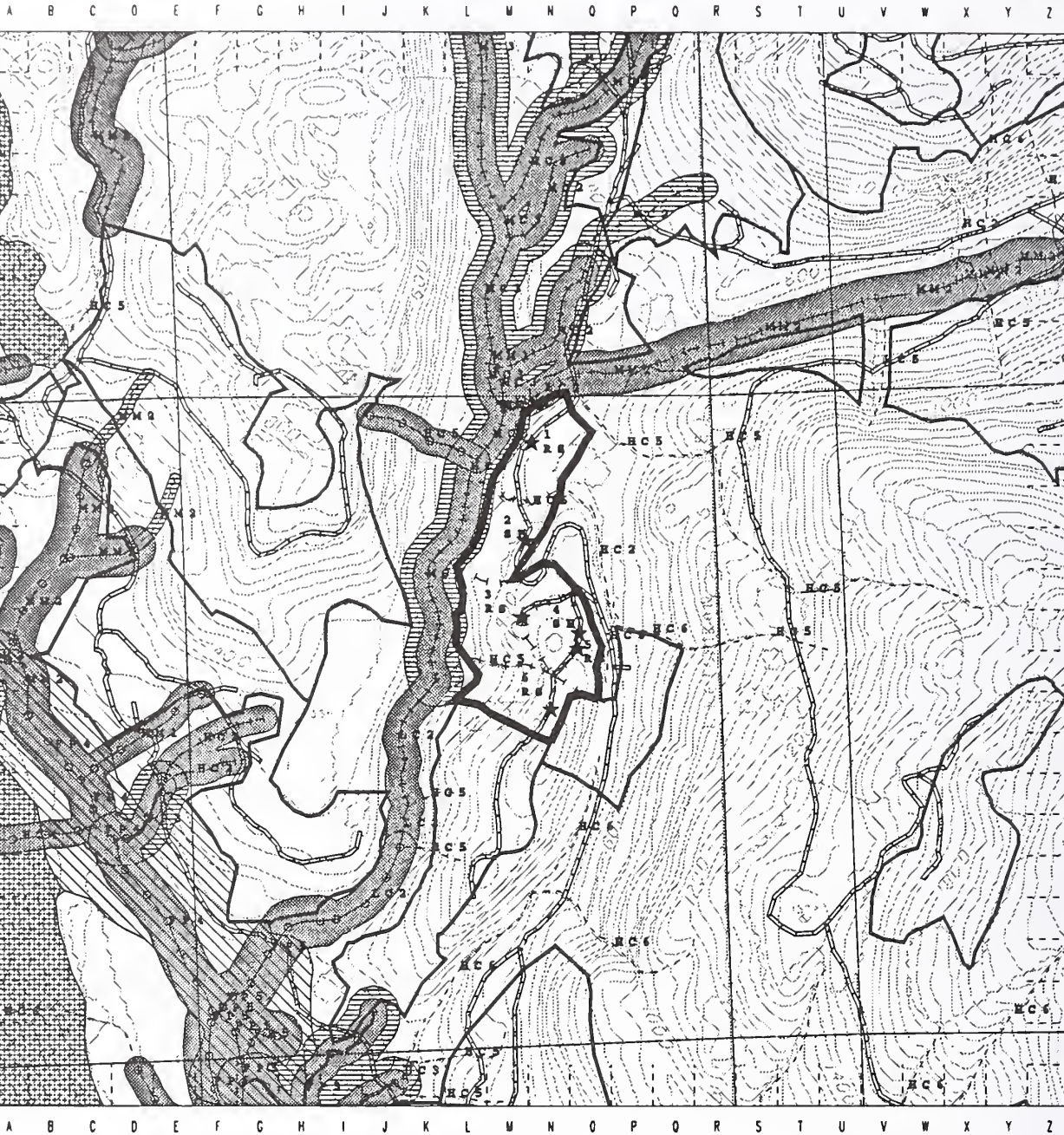
No concerns. NRB 8/31/95

SILVICULTURE INPUT

Moderately productive with good natural regeneration. Monitor need for artificial regeneration on unstable soils. Prescription should address partial cut stream buffer. CBD 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 385 DEIS# 59

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/stall/uc/draftcard/dc1095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Road		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index & Well

LOGGING SYSTEMS Abbrev.

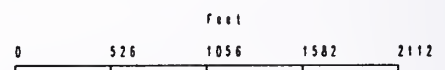
RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 0
Volc 5 - 1.1
Volc 6 - 0
Volc 7 - 0
Total Acres - 43.6
Potential MBF - 411.9
Quarter Oad - KTNCSNE
VCU Number - 744
Photo Number - 1890-45
Alternative Pollers - 023450
w Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 60 Planned Acres: 9.5 Estimated Volume: 254.1 In Alternatives: 0, 0, 0, 0
Silvicultural System : Clearcut Settings: 2 Quad: KTNC5NE Photo: 1890-47 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 386 Original LSTA Unit: 744-386

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 9.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
Volume class breakdown: Class 4: 9.1 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.4
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 9.5 Primary VQO: MM Recreation: Pl
Mass movement index: Low 0.0 Medium 0.0 High 9.5 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of high landslide potential soils (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). Road will require some full bench construction (BMP 14.7) and end haul of overburden (BMP 14.12). Recommend that waste material be disposed of in valley bottom, away from the stream (Y-17). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Adjust final unit boundary to reflect updated stream buffer location.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit is bordered by a Class II stream on the north (BMP 12.6), requiring a 100 foot TTRA buffer (BMP 12.6a). This reach is deeply incised, a buffer in excess of 100 feet may be needed to provide protection. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 8/31/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 386 DEIS# 60

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u06/staff/uc/draftcard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvaat Buffer
	Planning Road		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvaat Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvaat
	Contour or Ortho Line		Mass Movement Index & Soil

Volc 4 - 9.1
 Volc 5 - 0
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 9.5
 Potential MBF - 254.1
 Quarter Quad - K7NC4NW
 VCU Number - 744
 Photo Number - 1890-47
 Alternative Pattern - 000000
 * Landing

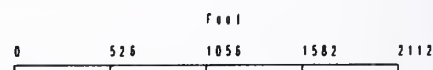
LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Slack Line
 SH Shovel Yarding

Projection - Stateplane



Eagle West



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 61 Planned Acres: 26.1 Estimated Volume: 620.4 In Alternatives: 2, 3, 4, 5
Silvicultural System : Clearcut Settings: 3 Quad: KTNC4NW Photo: 1890-47 Logging systems: RS SL
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 396 Original LSTA Unit: 744-396

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 20.8 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
Volume class breakdown: Class 4: 20.6 Class 5: 0.2 Class 6: 0.0 Class 7: 0.0 Low Productive 5.3
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 26.1 Primary VQO: MM Recreation: Pl
Mass movement index: Low 2.1 Medium 0.0 High 24.0 Very High 0.0 Wetland 4.9 Mix Wetland 0.0
% of High Value Habitat: Deer- 76% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Field reconnaissance indicated that the southern portion of planned unit may have a blindlead if final road location is adjusted. Helicopter logging or a backline adjustment may be required to achieve the required suspension.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

To the north, this unit is bordered by a Class II stream that will require a minimum 100 foot TTRA buffer (BMPs 12.6, 12.6a). To the west is a sensitive water quality stream that has recently experienced debris torrents. Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Recommend a slope break buffer on this stream (BMP 12.6a). SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

V-notch located along the west side (L-10 to K-14) of this unit. Recommend windfirm slope break buffer be maintained along the edge of this V-notch (BMP 13.16). NRB 8/31/95

SILVICULTURE INPUT

Moderate productivity with good natural regeneration. Past evidence of windthrow indicates need to establish windfirm boundaries. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 396 DEIS# 61

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s/06/staff/ac/draftcard/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|---|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Roads | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Setting Line | | Body of Water |
| | Other UC DEIS Unit Boundary Contour or Ortho Line | | Prior Harvest |
| | | | Mass Movement Index & Soil |

Volc 4 - 20.6
 Volc 5 - 0.2
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 26.1
 Potential MBI - 620.4
 Quarter Quad - KINC4W
 VCU Number - 744
 Photo Number - 1890-47
 Alternative Pattern - 023450
 ★ Landing

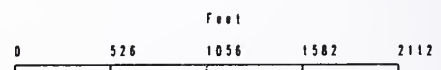
LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Stock Line
 SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 62 Planned Acres: 44.2 Estimated Volume: 881.5 In Alternatives: 2, 0, 4, 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTNC4NW Photo: 1890-47 Logging systems: HE
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 400 Original LSTA Unit: 744-400

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)
Forest type: Cedar 0.0 Hemlock 26.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
Volume class breakdown: Class 4: 26.3 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 17.9
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 44.2 Primary VQO: MM Recreation: Pl
Mass movement index: Low 0.0 Medium 0.0 High 44.2 Very High 0.0 Wetland 44.2 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 45% Otter- 0% Eagle- 0% Black Bear- 90%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit includes high landslide potential soils, MMI=3, (BMP 13.5) and forested wetlands (BMP 12.5). Recommend at least partial log suspension when yarded (BMP 13.9). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

Two water quality streams are located in this unit. Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the streams (BMP 13.9).

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

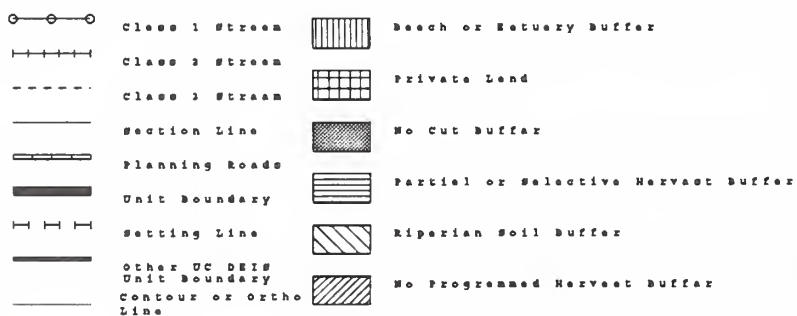
Moderate productivity with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 400 DEIS# 62

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/stall/uc/draftcard/dc1095 amf



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 26.3
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 44.2
Potential MBR - 881.5
Quarter Quad - KTHC4NW
VCU Number - 744
Photo Number - 1890-47
Alternative Pattern - 020400
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 63 Planned Acres: 21.9 Estimated Volume: 601.8 In Alternatives: 0, 0, 0, 0
Silvicultural System: Clearcut Settings: 4 Quad: KTNC4NW Photo: 1890-46 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 416 Original LSTA Unit: 744-416

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 21.9 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 21.9 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 21.9 Primary VQO: MM Recreation: Pl
Mass movement index: Low 0.0 Medium 21.9 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 91% Martin- 91% Otter- 0% Eagle- 0% Black Bear- 91%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
Southern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

Unit contains water quality streams that flow directly into Class II resident fish habitat (BMP 12.6). SPL 1/3/95
Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the
stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). NRB
9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

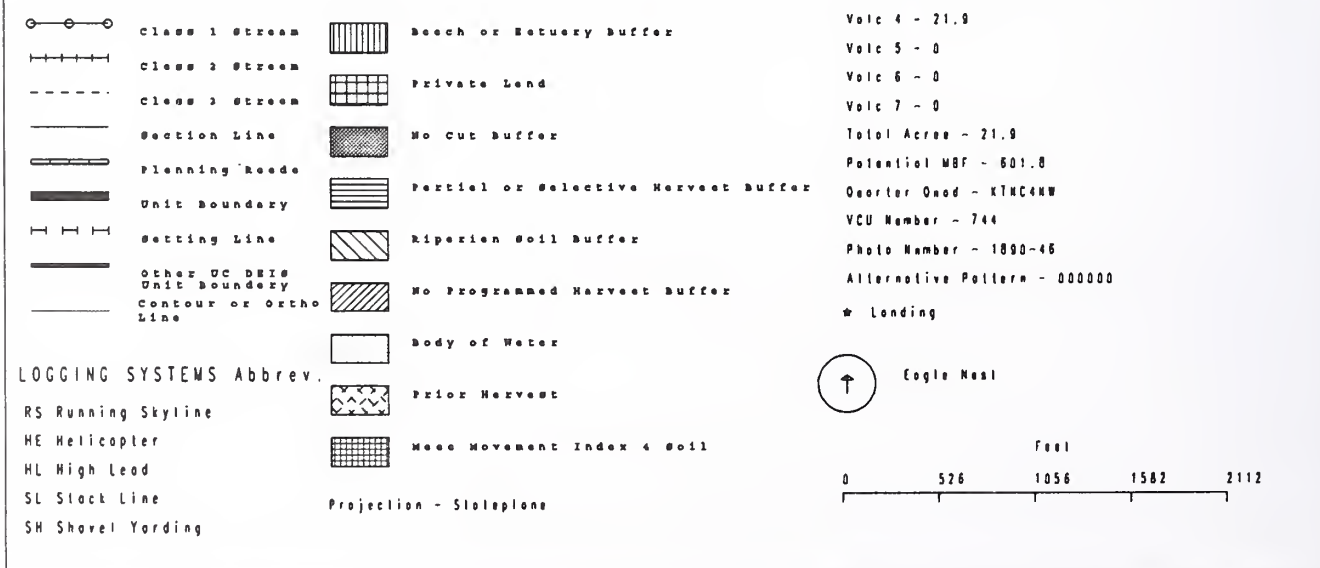
High productivity with good natural regeneration. No concerns. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 416 DEIS# 63

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draftcard/dc1095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 64 Planned Acres: 11.2 Estimated Volume: 308.3 In Alternatives: 0, 3, 0, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC4NW Photo: 1890-46 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 418 Original LSTA Unit: 744-418

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 11.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 11.2 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 11.2 Primary VQO: MM Recreation: Pl
Mass movement index: Low 0.0 Medium 11.2 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
Final road location will determine if this unit will be cable yarded or helicopter yarded. Verify feasibility and
modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench
construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

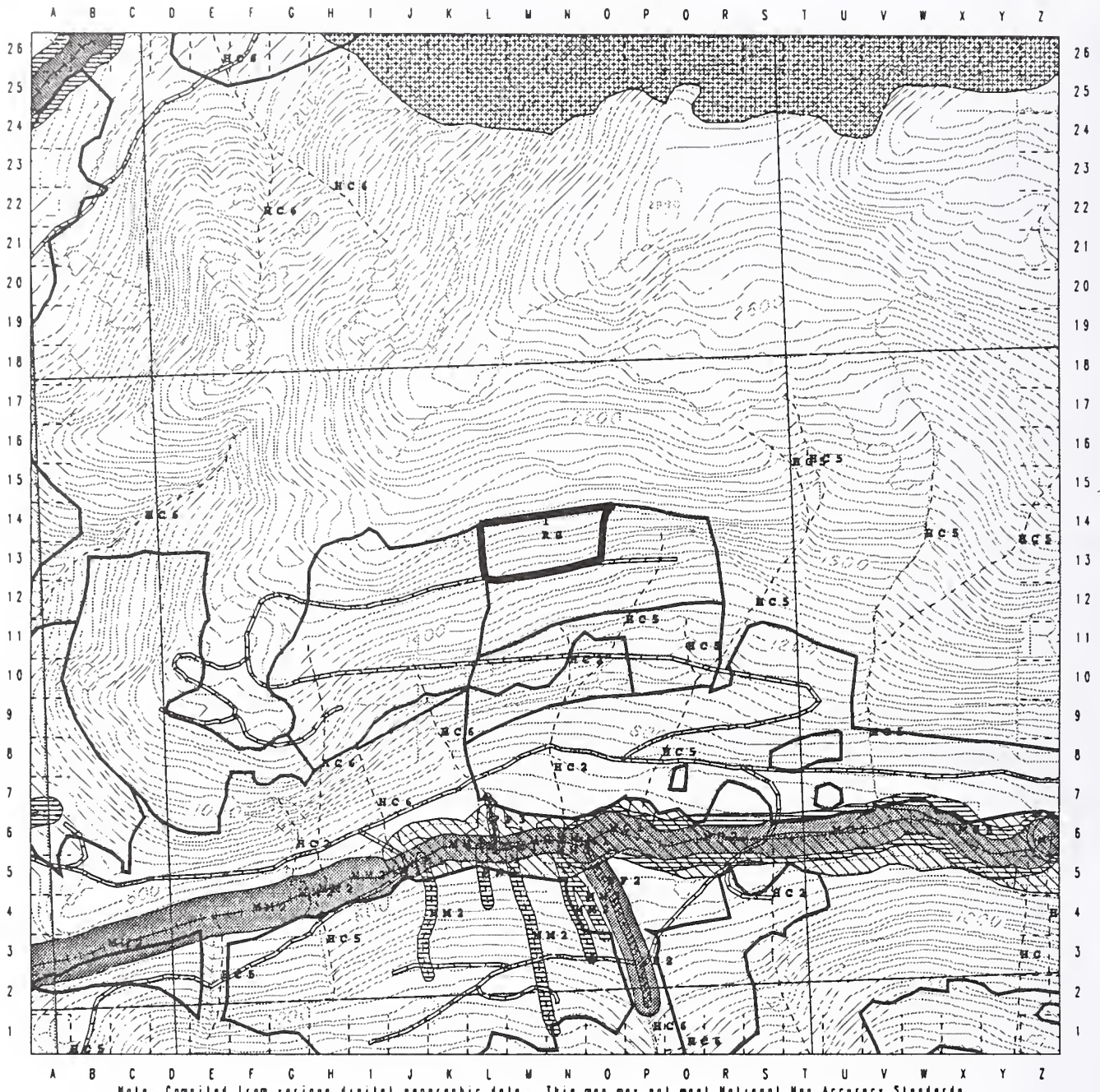
No concerns. NRB 8/31/95

SILVICULTURE INPUT

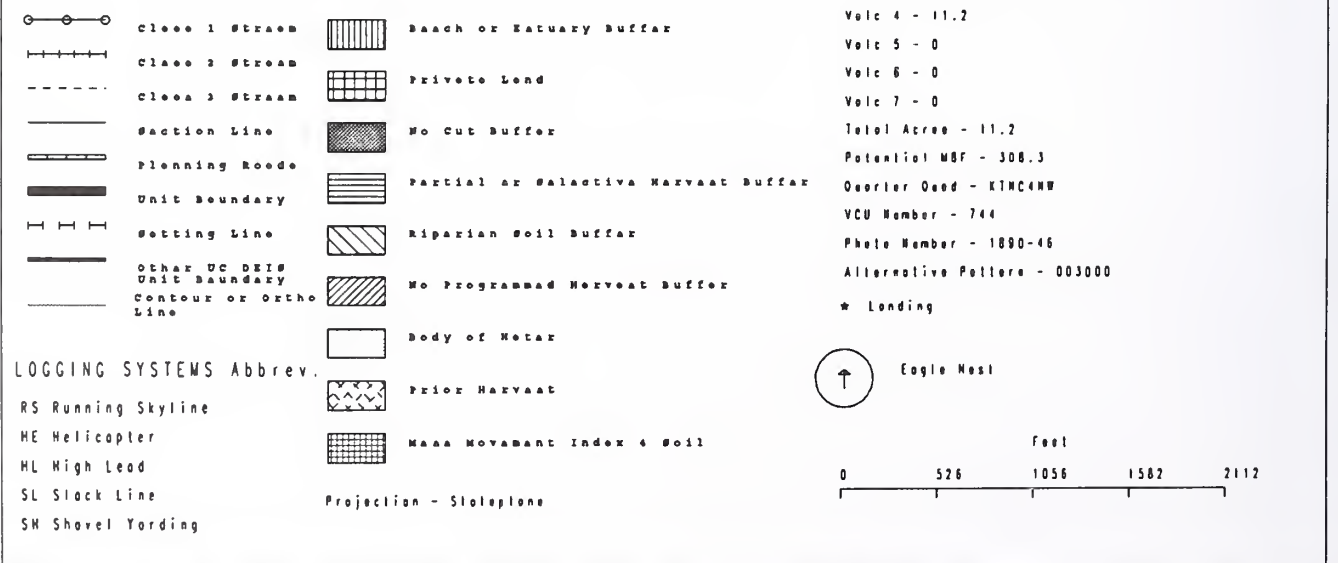
High productivity with good natural regeneration. No concerns. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 418 DEIS# 64

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /x06/stult/uc/draftcard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 65 Planned Acres: 29.3 Estimated Volume: 805.8 In Alternatives: 0, 3, 0, 0
Silvicultural System : Clearcut Settings: 4 Quad: KTNC4NW Photo: 1890-46 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 420 Original LSTA Unit: 744-420

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 29.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 29.3 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 29.3 Primary VQO: MM Recreation: Pl
Mass movement index: Low 0.0 Medium 29.3 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 68% Martin- 68% Otter- 0% Eagle- 0% Black Bear- 68%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists mostly of high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.5). Road construction will require full bench and end haul of over burden (BMPs 14.7, 14.12) over much of the length of the proposed road. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Final road location will determine the feasibility of the planned upper unit boundary.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit contains at least one water quality stream (BMP 12.6) Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric and Mass movement prone soils that will need to be planted. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 420 DEIS# 65

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/nc/draftcard/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Street
Class 2 Street
Class 3 Street
Section Line
Planning Roads
Unit Boundary
Setting Line
Other DC DEIS Unit Boundary
Contour or Ortho Line

Beech or Tertiary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 29.3
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 29.3
Potential MBF - 805.8
Quarter Quad - KTHC4NW
VCU Number - 744
Photo Number - 1890-46
Alternative Pattern - 003000
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest

Feet
0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 66 Planned Acres: 55.0 Estimated Volume: 1,347.5 In Alternatives: 2, 3, 4, 5
Silvicultural System: Clearcut Settings: 8 Quad: KTNC4NW Photo: 1890-46 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 421 Original LSTA Unit: 744-421

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 46.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 46.2 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 8.8
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 55.0 Primary VQO: MM Recreation: Pl
Mass movement index: Low 3.8 Medium 31.2 High 19.9 Very High 0.0 Wetland 3.8 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 72%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Upper slopes (K-14 to P-15) in this unit include low productivity, subalpine, mountain hemlock and mixed conifer series sites. Regeneration and growth on these sites may be a concern. Road construction will require some full bench and end haul of waste material (BMPs 14.7 and 14.12). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Final road location will determine if unit will be cable yarded or converted to helicopter yarding.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

Unit contains a water quality stream (N-15 to O-12) (BMP 12.6). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

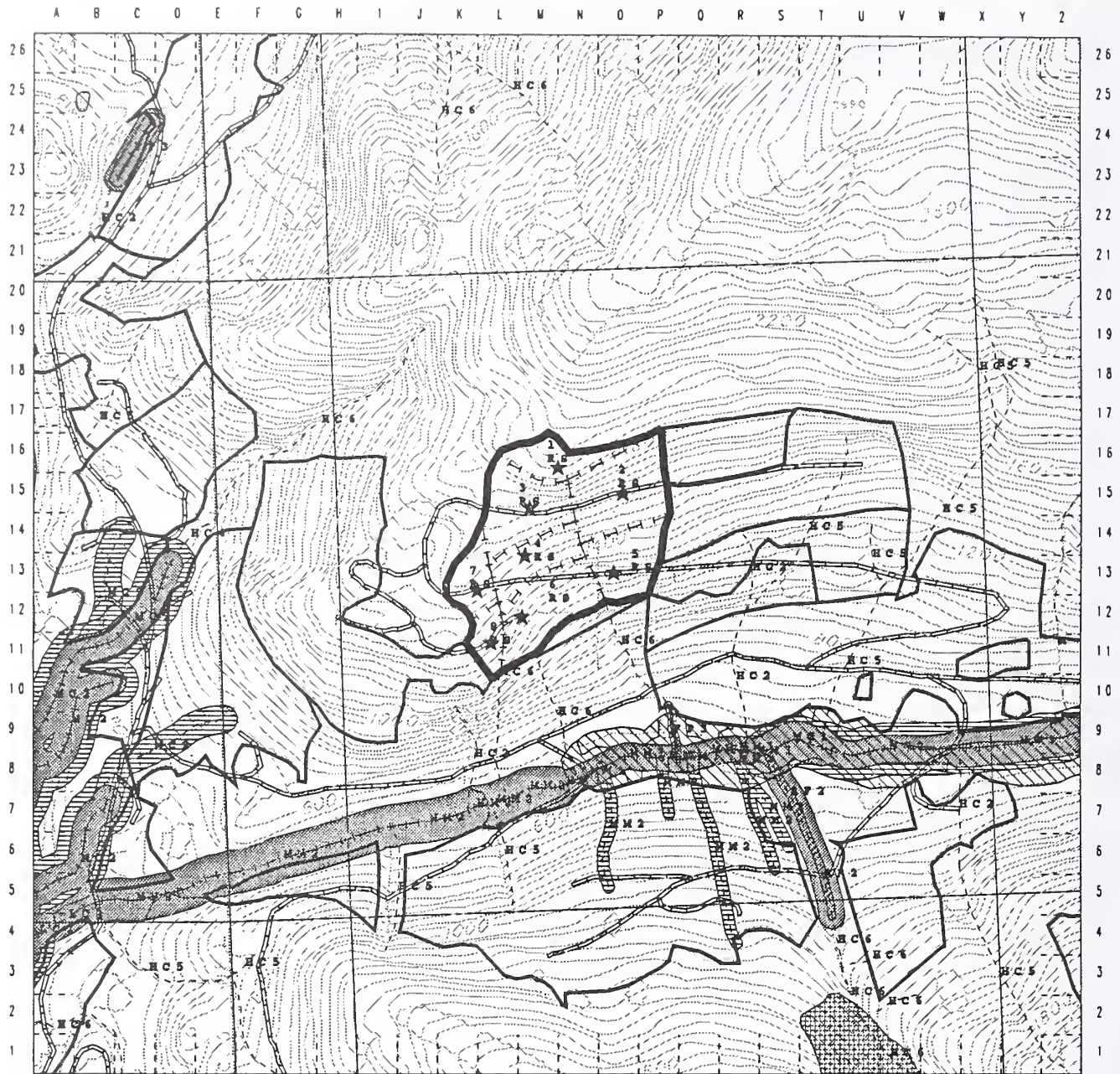
No concerns. NRB 8/31/95

SILVICULTURE INPUT

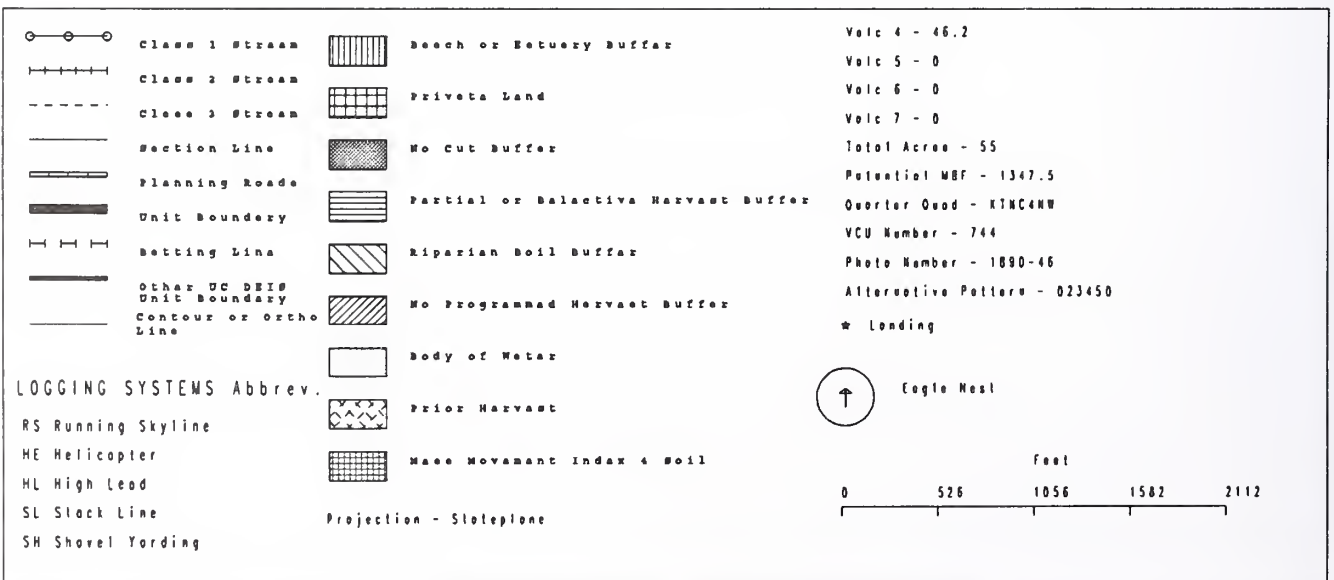
High productivity yet scattered pockets of Alaska yellow cedar decline and landslide prone soils exist. High elevation areas will require planting. (3 acres). Past evidence of windthrow indicates need for windfirm boundary location. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 421 DEIS# 66

Mapscale 1:15840 (4 inch to Mile)
 Created 11-4-95, /s06/staff/uc/draftcard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 67 Planned Acres: 39.6 Estimated Volume: 885.8 In Alternatives: 2, 3, 0, 5
Silvicultural System: Clearcut Settings: 3 Quad: KTNC4NW Photo: 1890-46 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 423 Original LSTA Unit: 744-423

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 28.7 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 28.7 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 10.9
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 39.6 Primary VQO: MM Recreation: Pl
Mass movement index: Low 6.9 Medium 2.9 High 29.7 Very High 0.0 Wetland 9.9 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The upper slopes (M-16 to O-12) of this unit includes high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9).

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Eastern portion of planned unit appears to be a blindlead. Run profiles to verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit contains a segment of Class I fish habitat (M-12 to K-11) (BMP 12.6) that will require a 100 foot TTRA buffer (BMP 12.6a). SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (5 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 423 DEIS# 67

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /w00/staff/uc/draft/cord/det1095 eml



- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 2 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Roads | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Settling Line | | Body of Water |
| | Other UC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index 4 Soil |

LOGGING SYSTEMS Abbrev.

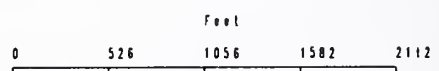
RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 28.7
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 39.6
Potential MBF - 885.8
Quarter Ood - KINCSE
VCU Number - 744
Photo Number - 1890-46
Alternative Pattern - 023050
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 68 Planned Acres: 6.4 Estimated Volume: 73.0 In Alternatives: 2, 3, 0, 5
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1573-160 Logging systems: LS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 424 Original LSTA Unit: 744-424

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.9 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 0.9 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 5.4
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 6.4 Primary VQO: MM Recreation: Pl
Mass movement index: Low 3.9 Medium 2.4 High 0.0 Very High 0.0 Wetland 6.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Live Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

This unit is bordered to the west and south by Class II fish habitat (BMP 12.6). These streams will require a minimum 100 foot TTRA buffer (BMP 12.6a). NRB 8/31/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns, NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

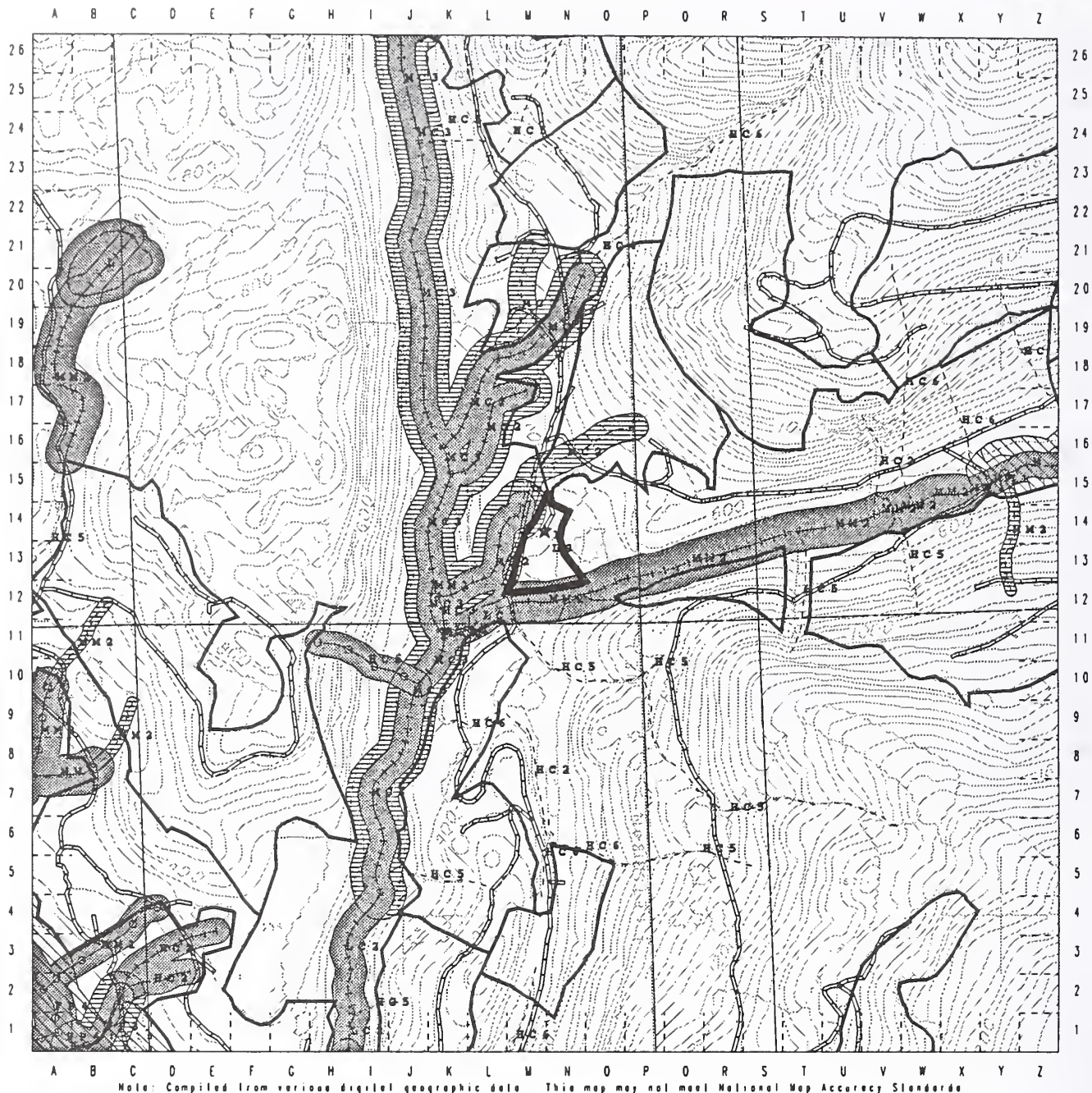
No concerns. 8/31/95

SILVICULTURE INPUT

Low productivity. Monitor regeneration to determine if planting will be necessary. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 424 DEIS# 68

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/wc/draftcard/dc1095 am)



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Roads | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Setting Line | | Body of Water |
| | Other DC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index 4 Soil |

LOGGING SYSTEMS Abbrev.

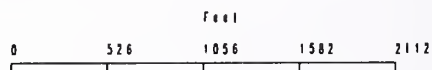
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplane

Volc 4 - 0.9
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 6.4
Potential MBF - 73
Quarter Quad - KTHCSNE
VCU Number - 744
Photo Number - 1573-160
Alternative Pollers - 023050
★ Logging



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 69 Planned Acres: 15.0 Estimated Volume: 219.0 In Alternatives: 0, 0, 4, 0
Silvicultural System : Clearcut Settings: 4 Quad: KTNC5NE Photo: 1573-160 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 425 Original LSTA Unit: 744-425

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 6.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 4.7 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 14.1
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 20.4 Primary VQ0: MM Recreation: Pi
Mass movement index: Low 0.0 Medium 19.4 High 1.0 Very High 0.0 Wetland 16.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 98% Martin- 98% Otter- 0% Eagle- 0% Black Bear- 98%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Shovel yarding may be utilized in conjunction with selective harvest in buffers. Selective harvest will require ITM and marking guides.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

This unit contains a Class II stream (BMP 12.6) that will require a 100 foot TTRA buffer (BMP 12.6a). A Class I stream is adjacent to the unit and will require a 100 foot TTRA buffer. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/28/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. 8/31/95

SILVICULTURE INPUT

Low productivity. Monitor regeneration to determine if planting will be necessary. Prescription should address partial cut stream buffer. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 425 DEIS# 69

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/stall/ac/draftcard/dc1095 eml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index & Soil

LOGGING SYSTEMS Abbrev.

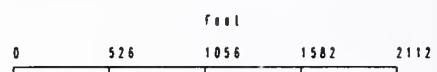
RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 4.7
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 15
Potential MBF - 219
Quarter Quad - KTHCSHE
VCU Number - 744
Photo Number - 1573-160
Alternative Pattern - 000400
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 70 Planned Acres: 55.0 Estimated Volume: 1,433.2 In Alternatives: 0, 0, 4, 0
Silvicultural System : Clearcut Settings: 4 Quad: KTNC5NE Photo: 1890-46 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 426 Original LSTA Unit: 744-426

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 50.7 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 50.7 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 4.3
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 55.0 Primary VQO: MM Recreation: P1
Mass movement index: Low 1.0 Medium 0.0 High 54.0 Very High 0.0 Wetland 1.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 72% Martin- 72% Otter- 0% Eagle- 0% Black Bear- 72%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The north part of the proposed harvest unit is made up of very high landslide potential soils, MMI=4. Recommend that settings 1 and the north part of setting 2 be dropped from consideration in this harvest unit (BMP 13.5). The rest of this unit is made up of high landslide potential, MMI=3 (BMP 13.5). Recommend at least partial log suspension during yarding (BMP 13.9)

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Northern portion of planned unit is within identified MMI 4 soils. Recommend modifying North unit boundary to a ground location at map reference J14 to L13. Verify feasibility of remaining unit and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

The north part of the proposed unit contains deep V-notches that will limit technical suitability. See SOILS INPUT for recommendations. NRB 8/31/95

SILVICULTURE INPUT

Moderately productive with small areas of high elevation and high mass movement soils. Planting will be required, using high elevation Sitka spruce or Alaska yellow cedar if available. (6 acres) CBG 10/17/95

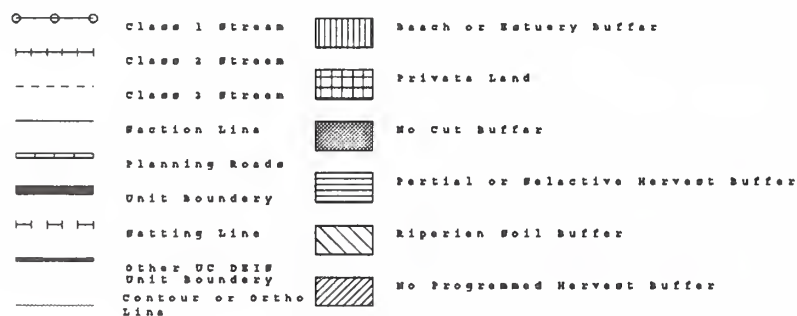
Upper Carroll Study Area Unit Schematic - Unit 426 DEIS# 70

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/stoll/wc/draftcard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



LOGGING SYSTEMS Abbrev.

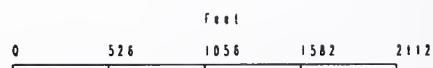
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 50.7
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 55
Potential MBF - 1433.7
Quarter Quad - KTHC4NW
VCU Number - 744
Photo Number - 1890-46
Alternative Pattern - 000400
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 71 Planned Acres: 27.1 Estimated Volume: 756.1 In Alternatives: 0 , 0 , 4 , 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-46 Logging systems: SL
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 429 Original LSTA Unit: 744-429

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 24.6 Spruce 0.0 Mixed Hem/Spr 1.9 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 23.5 Class 5: 3.1 Class 6: 0.0 Class 7: 0.0 Low Productive 0.5
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 27.1 Primary VQO: MM Recreation: P1
Mass movement index: Low 0.0 Medium 26.8 High 0.3 Very High 0.0 Wetland 12.6 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Slackline. Confirm final road and landing locations.
Northern portion of planned unit appears to be a blindlead. Locate road/landing in south end of unit to gain maximum deflection. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Mailline road corridor passes through unit. Identified VQO is maximum modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

Moderate productivity with good natural regeneration. No concerns. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 429 DEIS# 71

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/stall/uc/draftcard/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|---|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Section Line | | No Cut Buffer |
| | Planning Roads | | Partial or Selective Harvest Buffer |
| | Unit Boundary | | Riparian Soil Buffer |
| | Setting Line | | No Programmed Harvest Buffer |
| | Other UC DEIS Unit Boundary Contour or Ortho Line | | Body of Water |
| | | | Prior Harvest |
| | | | Mass Movement Index & Soil |

LOGGING SYSTEMS Abbrev.

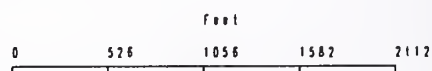
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 23.5
Volc 5 - 3.1
Volc 6 - 0
Volc 7 - 0
Total Acres - 27.1
Potential MBF - 756.1
Georler Qood - XTNC5NE
VCU Number - 744
Photo Number - 1890-46
Alternative Pattern - 000400
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 72 Planned Acres: 30.7 Estimated Volume: 916.4 In Alternatives: 2, 3, 0, 5
 Silvicultural System: Clearcut Settings: 4 Quad: KTNC4NW Photo: 1573-160 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 430 Original LSTA Unit: 744-430

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 30.2 Spruce 0.0 Mixed Hem/Spr 0.5 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 20.5 Class 5: 10.2 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 30.7 Primary VQO: MM Recreation: Pl
 Mass movement index: Low 0.0 Medium 24.1 High 6.6 Very High 0.0 Wetland 3.4 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

High landslide potential soils are found in the central (N-13) part of the unit (BMP 13.5). Recommend at least partial log suspension when yarding to minimize soil surface disturbance (BMP 13.9). A small area of forested wetland (BMP 12.5) is located in the south (M-11) part of the unit. This area could be shovel logged (BMP 13.9). NRB 8/31/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Eastern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

This unit contains a Class II stream that flows along the north unit boundary (BMP 12.6). Requires a 100 foot TTRA buffer (BMP 12.6a). One water quality stream flows through the south end of the unit. SPL 1/3/95 Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9). trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Mainline road runs through unit. Identified VQO is maximum modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/31/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/31/95

SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using high elevation Sitka spruce or Alaska yellow cedar if available. (3 acres) CBG 10/17/95

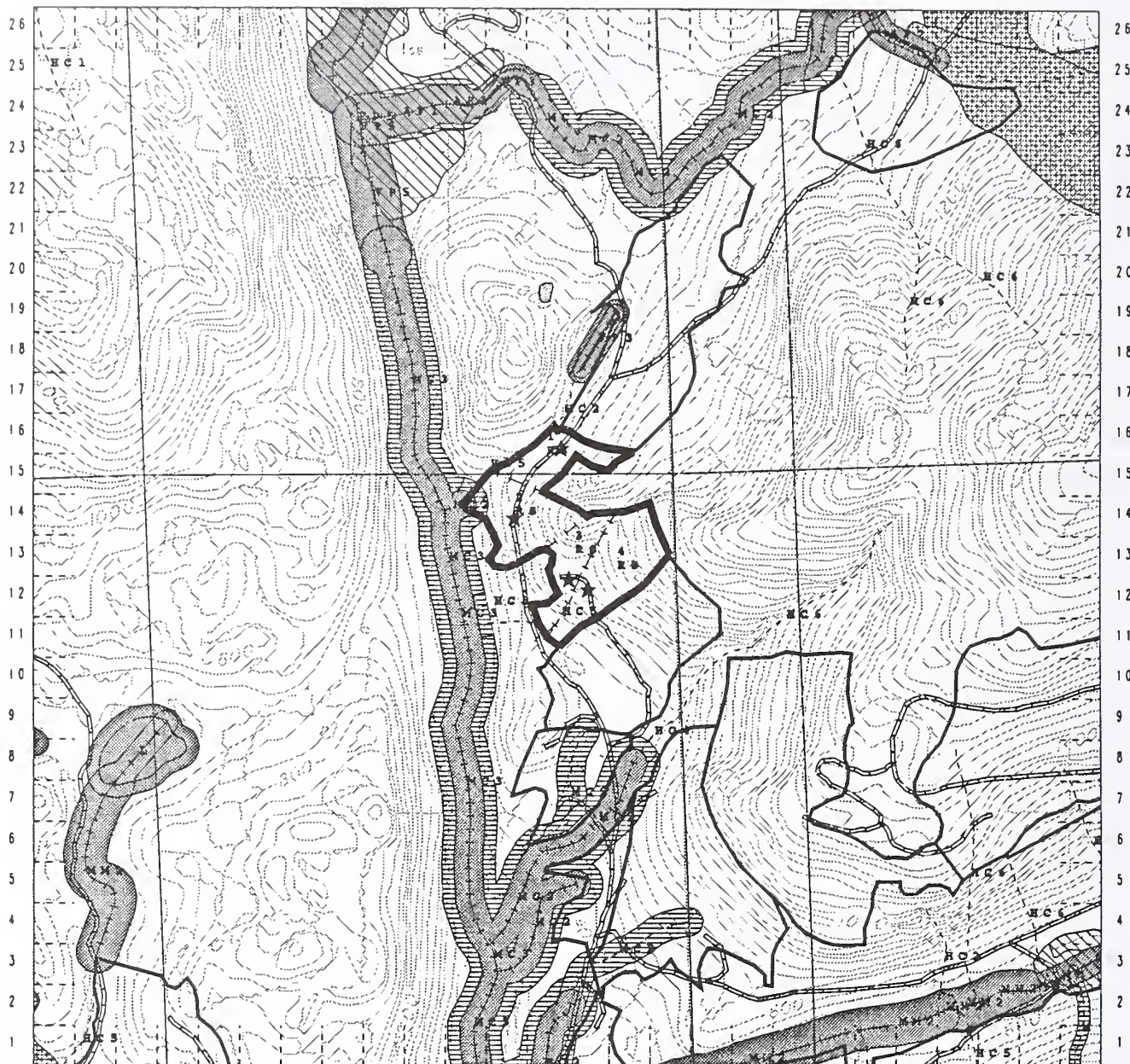
Upper Carroll Study Area Unit Schematic - Unit 430 DEIS# 72

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /w08/stall/uc/draftcard/dcl095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary Contour or Ortho Line		Prior Harvest
			Mass Movement Index & Soil

Volc 4 - 20.5
 Volc 5 - 10.2
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 30.7
 Potential MBF - 916.4
 Quarter Quad - KTWCSNE
 VCU Number - 744
 Photo Number - 1573-180
 Alternative Pattern - 023050
 * Lending

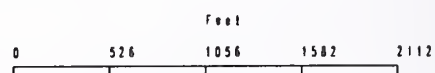
LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Stock Line
 SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 73 Planned Acres: 38.5 Estimated Volume: 1,116.5 In Alternatives: 2, 0, 4, 5
 Silvicultural System : Clearcut Settings: 4 Quad: KTNC5NE Photo: 1890-44 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 431 Original LSTA Unit: 744-431

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 30.0 Spruce 0.0 Mixed Hem/Spr 0.1 Nonforested 0.0 Aspect: NW
 Volume class breakdown: Class 4: 0.0 Class 5: 30.0 Class 6: 0.1 Class 7: 0.0 Low Productive 8.3
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 38.5 Primary VQO: MM Recreation: Pl
 Mass movement index: Low 5.6 Medium 0.0 High 32.8 Very High 0.0 Wetland 38.3 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of a combination of high landslide potential, MMI=3 (BMP 13.5), soils and forested wetlands (BMP 12.5). These areas will require at least partial log suspension during yarding to minimize soil surface disturbance (BMP 13.9). NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit is bordered by Class II streams to the north and southwest (BMP 12.6). Both streams will require 100 foot TTRA buffers (BMP 12.6a). SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/18/95

SILVICULTURE INPUT














High productivity with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/17/95

Created 11-4-95, /u08/stoll/vc/droilcord/dcl095 eml






A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



- | | | | |
|---|-----------------------------|---|-------------------------------------|
|  | Class 1 Stream |  | Beech or Sycamore Buffer |
|  | Class 2 Stream |  | Private Land |
|  | Class 3 Stream |  | No Cut Buffer |
|  | Section Line |  | Partial or Selective Harvest Buffer |
|  | Unit Boundary |  | No Programmed Harvest Buffer |
|  | Setting Line | | |
|  | Other UC DEIS Unit Boundary | | |
|  | Contour or Ortho Line | | |

Vole 4 - 0
 Vole 5 - 30
 Vole 6 - 0.1
 Vole 7 - 0
 Total Acres - 38.5
 Potential WBF - 1116.5
 Quarter Quad - KTHCSNE
 VCU Number - 744
 Photo Number - 1890-44
 Alternative Pattern - D20450
 ☆ Loding

RS Running Skyline
HE Helicopter
HL High Lead
SL Stack Line
SH Shovel Yarding

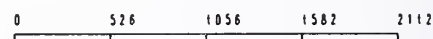
	Body of Water
	Prior Harvest
	Moss Movement Index 4 Soil

Projection - Stateplane



Eagle Nest

F 4 e 1



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 74 Planned Acres: 5.1 Estimated Volume: 65.6 In Alternatives: 2, 0, 4, 5
 Silvicultural System: Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1890-44 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 437 Original LSTA Unit: 744-437

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 1.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
 Volume class breakdown: Class 4: 1.1 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 4.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 5.1 Primary VQO: MM Recreation: P1
 Mass movement index: Low 5.1 Medium 0.0 High 0.0 Very High 0.0 Wetland 5.1 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 100%

Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit is made up of high landslide potential soils. MMI=3 (BMP 13.5) Recommend at least partial log suspension during yarding (BMP 13.9) NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No Concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

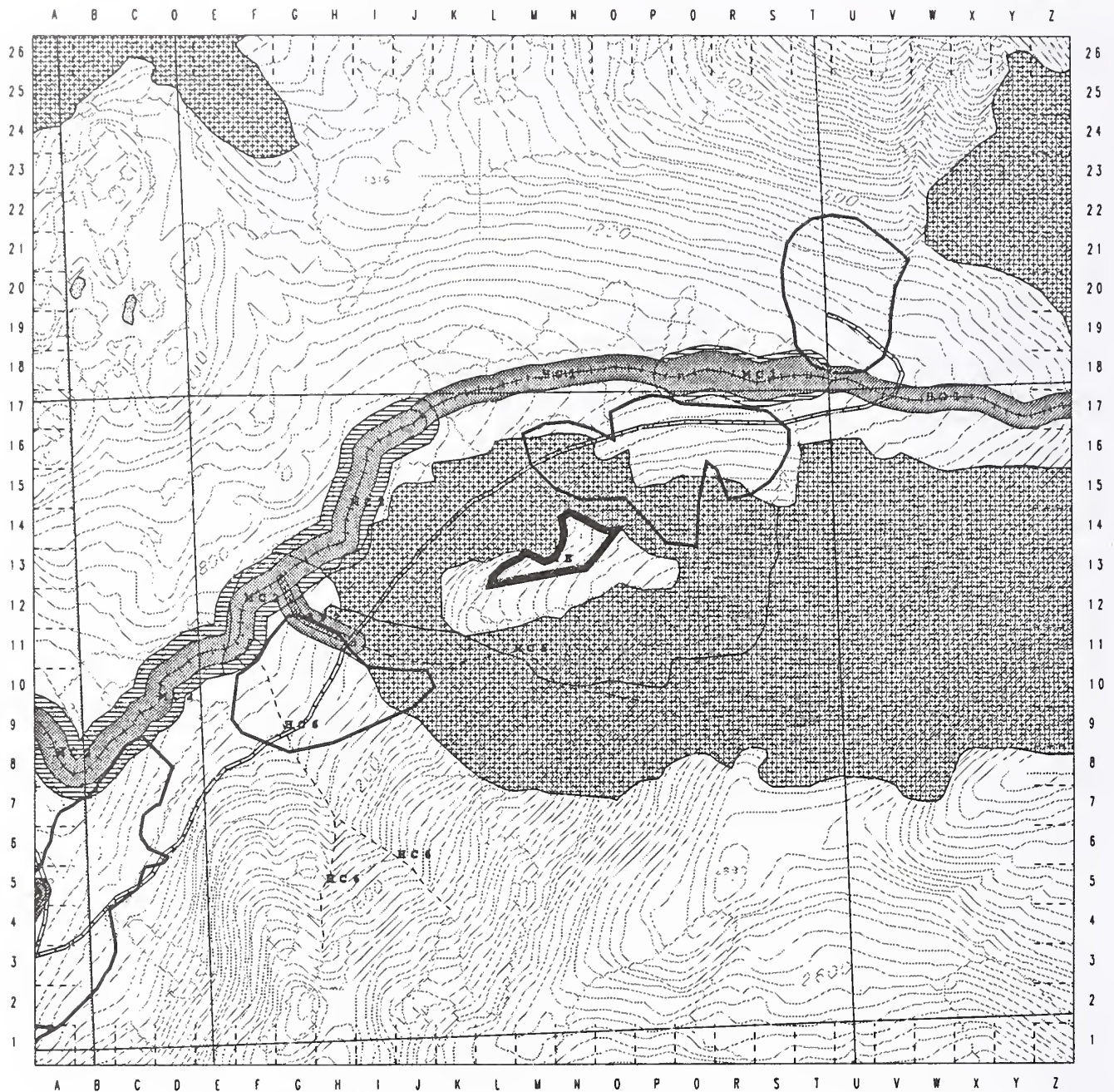
No concerns. NRB 9/18/95

SILVICULTURE INPUT

Low productivity, apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 437 DEIS# 74

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/stall/uc/draftcard/dcl095 uml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Road		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 1.1
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 5.1
Potential MBF - 85.8
Quarter Quad - KTHC4NW
VCU Number - 744
Photo Number - 1890-44
Alternative Pattern - 020450
★ Landing

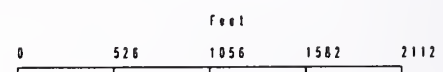
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Staleplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 75 Planned Acres: 27.0 Estimated Volume: 333.4 In Alternatives: 2, 0, 4, 5
Silvicultural System : Clearcut Settings: 2 Quad: KTNC5NE Photo: 1890-41 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 444 Original LSTA Unit: 744-444

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 5.1 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 5.1 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 21.8
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 27.0 Primary VQO: MM Recreation: P1
Mass movement index: Low 27.0 Medium 0.0 High 0.0 Very High 0.0 Wetland 27.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 74% Martin- 74% Otter- 0% Eagle- 0% Black Bear- 74%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Most of this unit consists of forested wetlands (BMP 12.5). Much of this unit is suitable for shovel yarding (BMP 13.9). NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. SPL 9/18/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

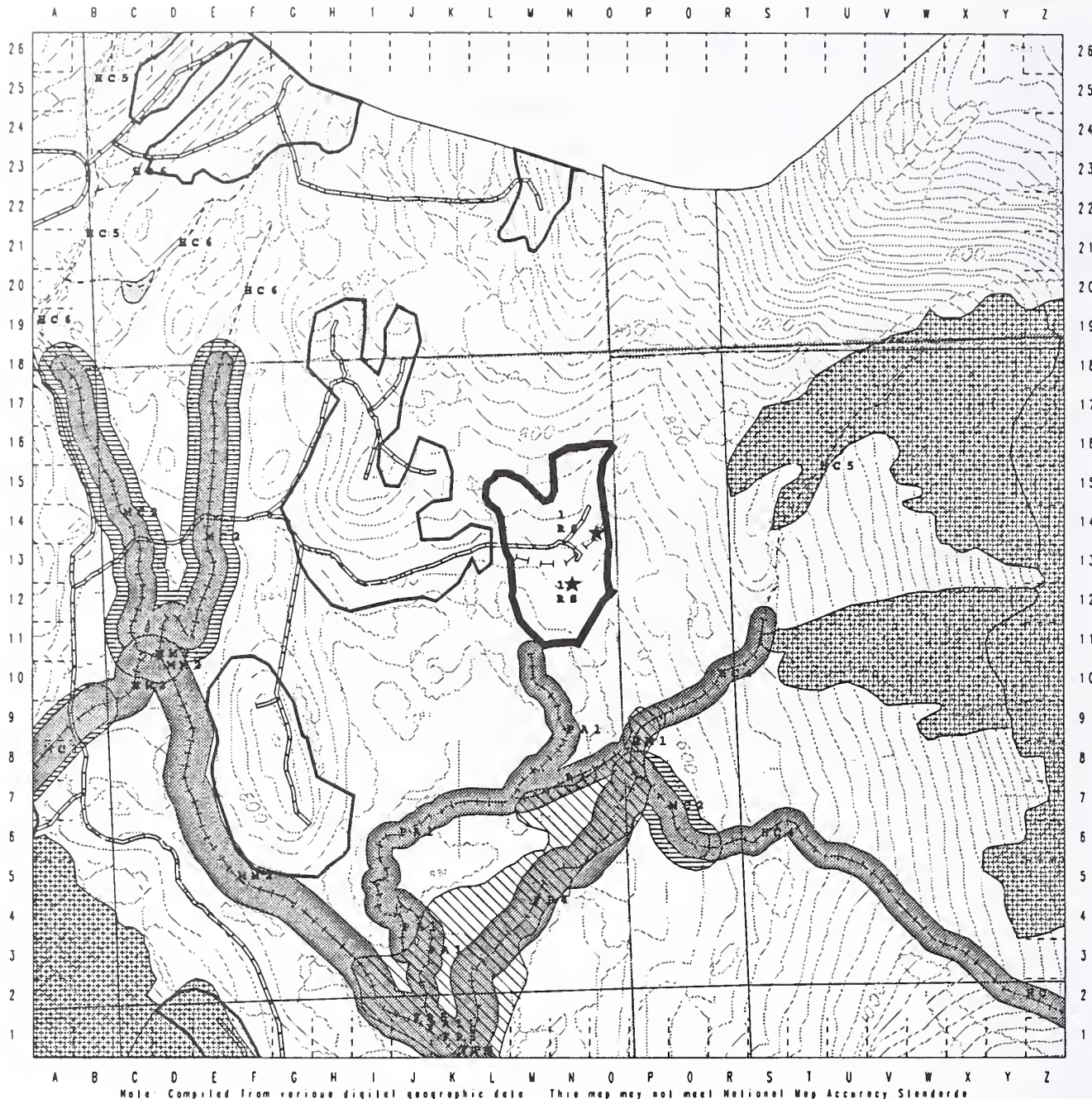
No concerns. NRB 9/18/95

SILVICULTURE INPUT

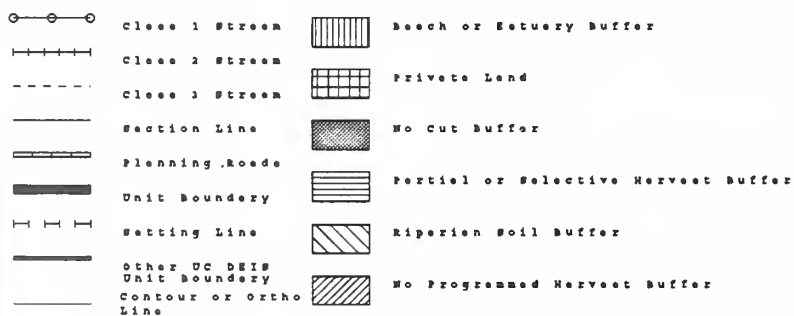
Moderately productive with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 444 DEIS# 75

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draftcard/dc1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



LOGGING SYSTEMS Abbrev.

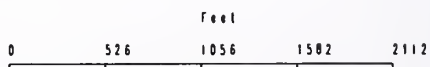
RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 5.1
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 27
Potential M8F - 333.4
Quarter Quad - KTHCSNE
VCU Number - 744
Photo Number - 1890-41
Alternative Pattern - 020450
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 76 Planned Acres: 32.9 Estimated Volume: 637.5 In Alternatives: 2, 0, 0, 5
Silvicultural System : Clearcut Settings: 3 Quad: KTNC4NW Photo: 1890-10 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 445 Original LSTA Unit: 744-445

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 18.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SE
Volume class breakdown: Class 4: 18.6 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 14.2
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 32.9 Primary VQO: MM Recreation: P1
Mass movement index: Low 32.9 Medium 0.0 High 0.0 Very High 0.0 Wetland 32.9 Mix Wetland 0.0
% of High Value Habitat: Deer- 60% Martin- 60% Otter- 0% Eagle- 0% Black Bear- 60%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of a mixture of upland and wetland soils on fairly gentle slopes (BMP 12.5). Much of the this unit is suitable for shovel logging (BMP 13.9).

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

The western unit boundary is adjacent to a Class II stream requiring a 100 foot TTRA buffer (BMPs 12.6, 12.6a). SPL 1/3/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized island of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/18/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 445 DEIS# 76

Mapscale 1:15840 (4 inch to Mile)
 Created 11-4-95, /u06/staff/uc/draftcar4/de1095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Roads | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Settling Line | | Body of Water |
| | Other DC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index 4 Soil |

LOGGING SYSTEMS Abbrev.

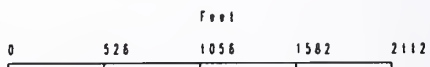
RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Slack Line
 SH Shovel Yarding

Projection - Stateplane

Volc 4 - 18.6
 Volc 5 - 0
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 32.9
 Potential MBF - 637.5
 Quarter Quad - KINCSNE
 VCU Number - 744
 Photo Number - 1890-10
 Alternative Pattern - 020050
 ★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 77 Planned Acres: 7.2 Estimated Volume: 198.5 In Alternatives: 2, 0, 0, 5
Silvicultural System : Clearcut Settings: 2 Quad: KTNC5NE Photo: 1890-8 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 447 Original LSTA Unit: 744-447

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 7.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 7.2 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 7.2 Primary VQ0: MM Recreation: P1
Mass movement index: Low 0.0 Medium 0.0 High 7.2 Very High 0.0 Wetland 1.0 Mix Wetland 6.3
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit contains high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension during yarding to minimize soil surface disturbance (BMP 13.9). NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

V-notch passes through the middle of the proposed harvest unit (BMP 13.5). Recommend that yarding be split on this V-notch (BMP 13.9) and that a windfirm slope-break buffer be retained within the V-notch (BMP 12.6a). Road construction across this V-notch will require some full bench roading with end haul of waste material (BMP 14.7). Waste material may be disposed of below the switch-back, just south of the unit (BMP 14.12) NRB 9/18/95

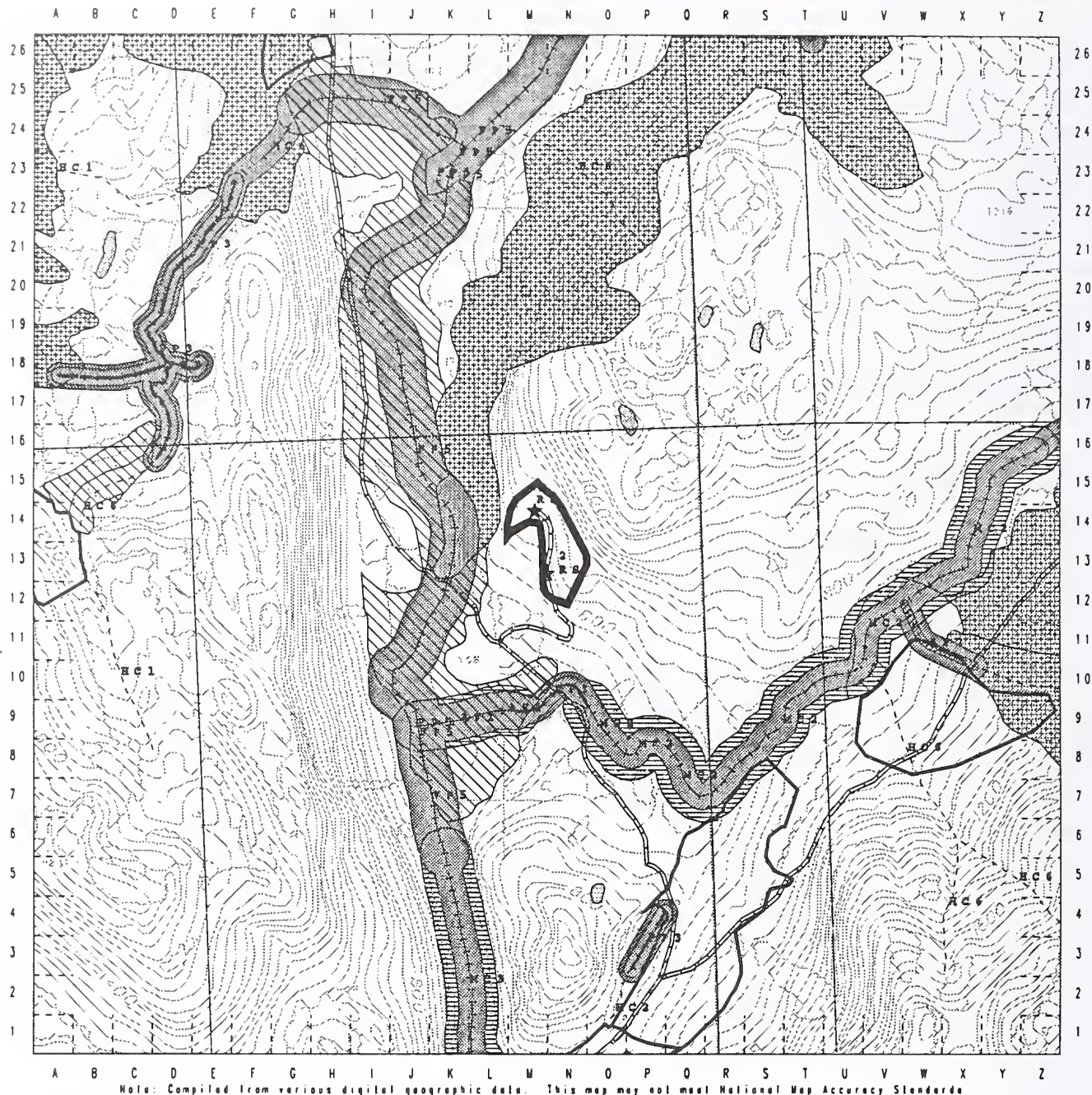
SILVICULTURE INPUT

High productivity with small areas of wetland soils and high mass movement soils. Planting will be required, using Alaska yellow cedar if available. (1 acre) CBG 10/17/95

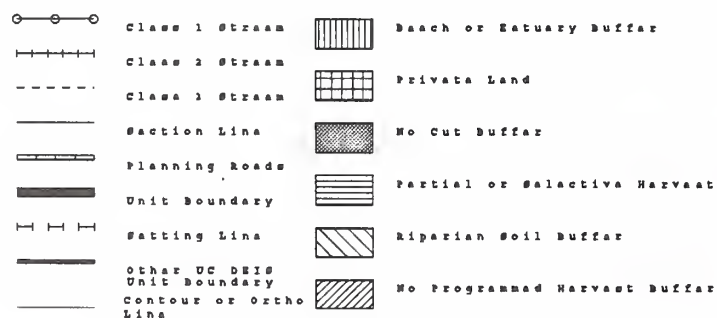
Upper Carroll Study Area Unit Schematic - Unit 447 DEIS# 77

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u06/staff/uc/draftcard/dcl095.sml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Volc 4 - 7.2
 Volc 5 - 0
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 7.2
 Potential MBF - 188.5
 Quarter Ood - KTNC5NE
 VCU Number - 744
 Photo Number - 1890-8
 Alternative Pattern - 020050
 * Landing



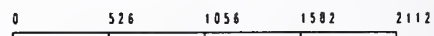
Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Stock Line
 SH Shovel Yarding

Projection - Stateplane

Feet



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 78 Planned Acres: 10.5 Estimated Volume: 430.9 In Alternatives: 0, 0, 0, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-182 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 452 Original LSTA Unit: 744-452

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 9.3 Nonforested 0.0 Aspect: SE
Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 9.3 Class 7: 0.0 Low Productive 1.1
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 10.5 Primary VQO: MM Recreation: Pl
Mass movement index: Low 0.2 Medium 10.2 High 0.0 Very High 0.0 Wetland 10.5 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Consider economic tradeoff of converting to helicopter yarding at time of layout - Road only accesses this unit.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigations measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

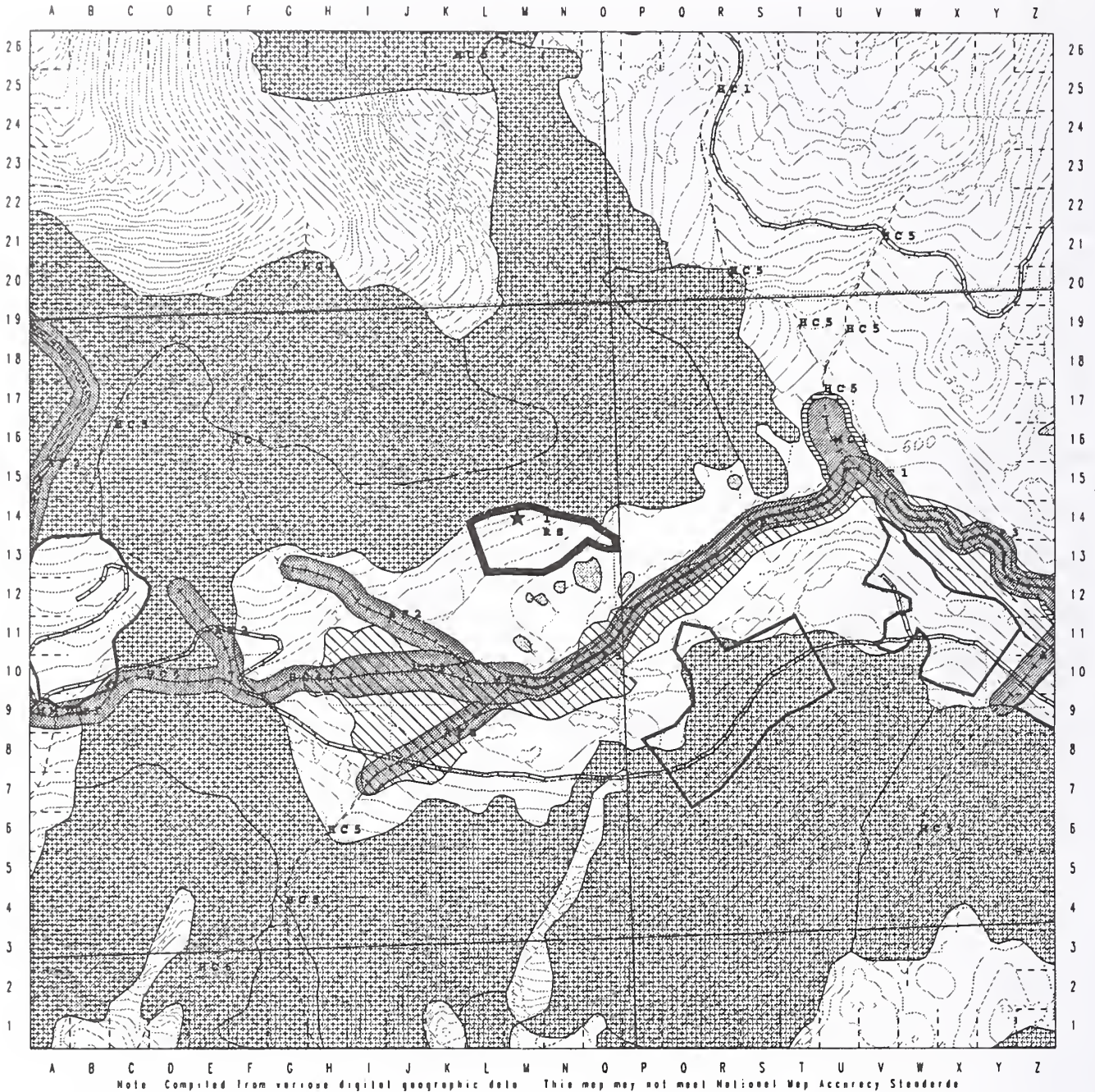
No concerns. NRB 9/18/95

SILVICULTURE INPUT

High productivity with good natural regeneration. No concerns. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 452 DEIS# 78

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stall/uc/draftcard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index & Soil

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

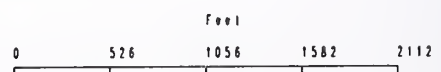
Projection - Stateplane

Volc 4 - 0
Volc 5 - 0
Volc 6 - 9.3
Volc 7 - 0
Total Acres - 10.5
Potential MBI - 430.9
Quarter Quad - KTWCSNE
VCU Number - 744
Photo Number - 1890-182
Alternative Pattern - 000000

* Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 79 Planned Acres: 26.9 Estimated Volume: 1.110.3 In Alternatives: 0, 0, 0, 5
Silvicultural System: Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-183 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 454 Original LSTA Unit: 744-454

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 8.2 Spruce 0.0 Mixed Hem/Spr 18.8 Nonforested 0.0 Aspect: SE
Volume class breakdown: Class 4: 2.6 Class 5: 5.5 Class 6: 18.8 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 26.9 Primary VQO: MM Recreation: SPNM
Mass movement index: Low 0.0 Medium 26.9 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 74% Martin- 74% Otter- 0% Eagle- 0% Black Bear- 74%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The lower slopes of this unit would be suitable for shovel yarding (BMP 13.9). NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline OR Slackline. Confirm final road and landing locations. Northern portion of planned unit appears to be a blindlead. Unit can be configured with a midslope and lower road with Running Skyline OR a Slackline system from the lower road tying beyond the North unit boundary. Verify yarding feasibilities and modify road locations as required.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

There is a class II stream (BMP 12.6) flowing along the western and southern boundary of the unit will require a 100 foot TTRA buffer (BMP 12.6a). SPL 1/3/95 A water quality stream flows through the middle of this unit (BMP 12.6). Recommend that yarding be split on this stream (BMP 13.9) and that trees be felled away from the stream-course (BMP 13.16). NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

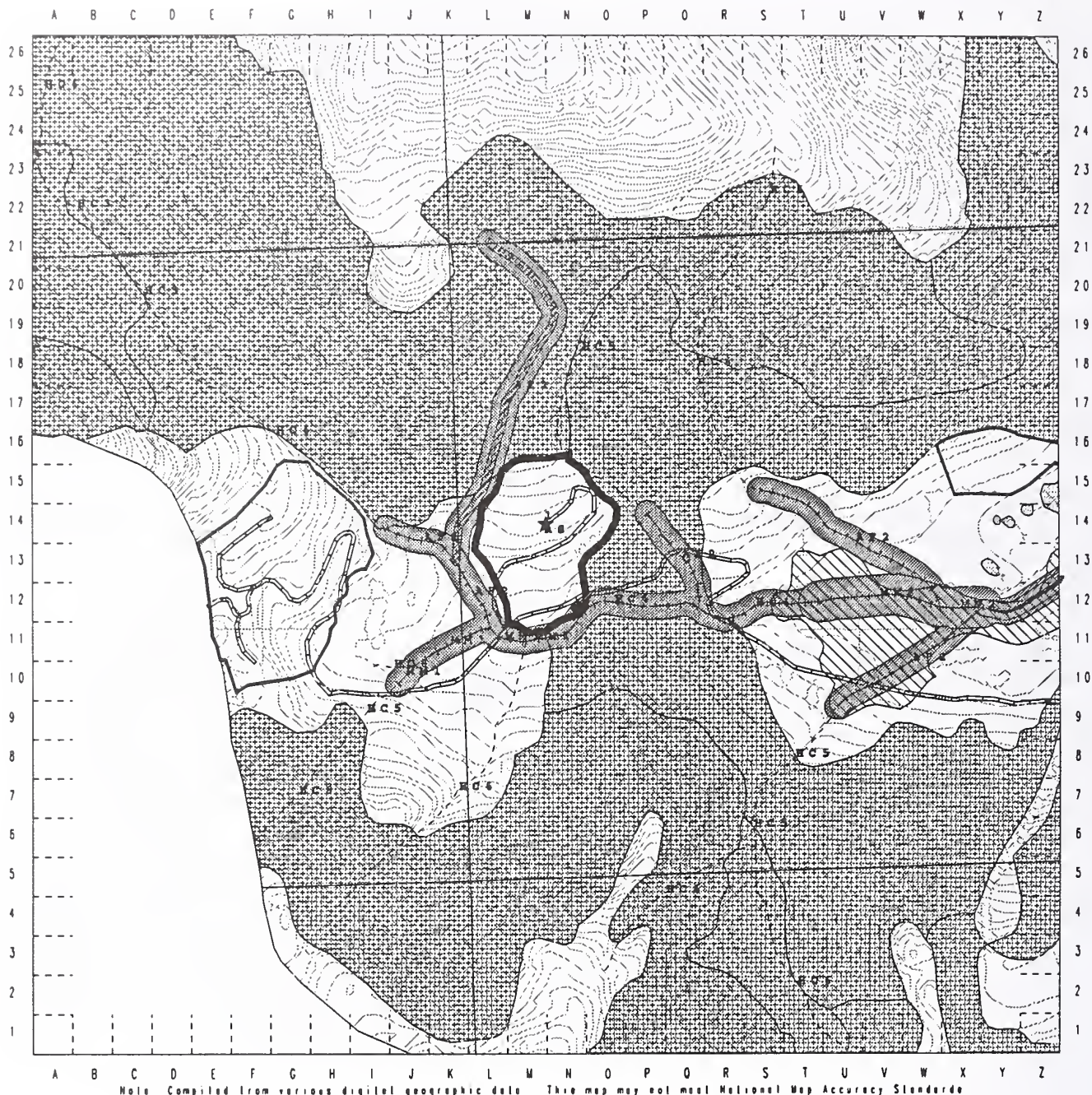
No concerns. NRB 9/18/95

SILVICULTURE INPUT

This unit has high volume, with small areas of high elevation soils. Planting will be required, using Alaska yellow cedar if available. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 454 DEIS# 79

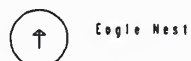
Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/uc/draftcard/dc1095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary Contour or Ortho Line		Prior Harvest
			Mass Movement Index & Soil

Volc 4 - 2.6
Volc 5 - 5.5
Volc 6 - 18.8
Volc 7 - 0
Total Acres - 26.9
Potential WBF - 1110.3
Quarter Quad - K1NC5NE
VCU Number - 744
Photo Number - 1890-183
Alternative Pattern - 000050
★ Landing

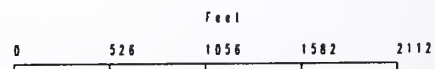


Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Slatoplane



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 80 Planned Acres: 41.1 Estimated Volume: 1,120.2 In Alternatives: 0, 0, 0, 5
Silvicultural System: Clearcut Settings: 7 Quad: KTNC5NE Photo: 1890-182 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 456 Original LSTA Unit: 744-456

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 17.2 Spruce 0.0 Mixed Hem/Spr 12.4 Nonforested 0.0 Aspect: SE
Volume class breakdown: Class 4: 16.8 Class 5: 0.4 Class 6: 12.0 Class 7: 0.0 Low Productive 11.5
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 41.1 Primary VQO: MM Recreation: SPNM
Mass movement index: Low 41.0 Medium 0.1 High 0.0 Very High 0.0 Wetland 41.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 97% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The south-central and north-central parts of this unit contain small areas of high landslide potential soils. MMI=3 (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). There is no road construction planned on these soils (BMP 14.2). There is some forested open wetland scattered throughout the north part of this unit (BMP 12.5). Recommend at least partial log suspension when yarding (BMP 13.9). Road construction should avoid these wetland areas, if possible (BMP 14.2) NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 09/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/18/95

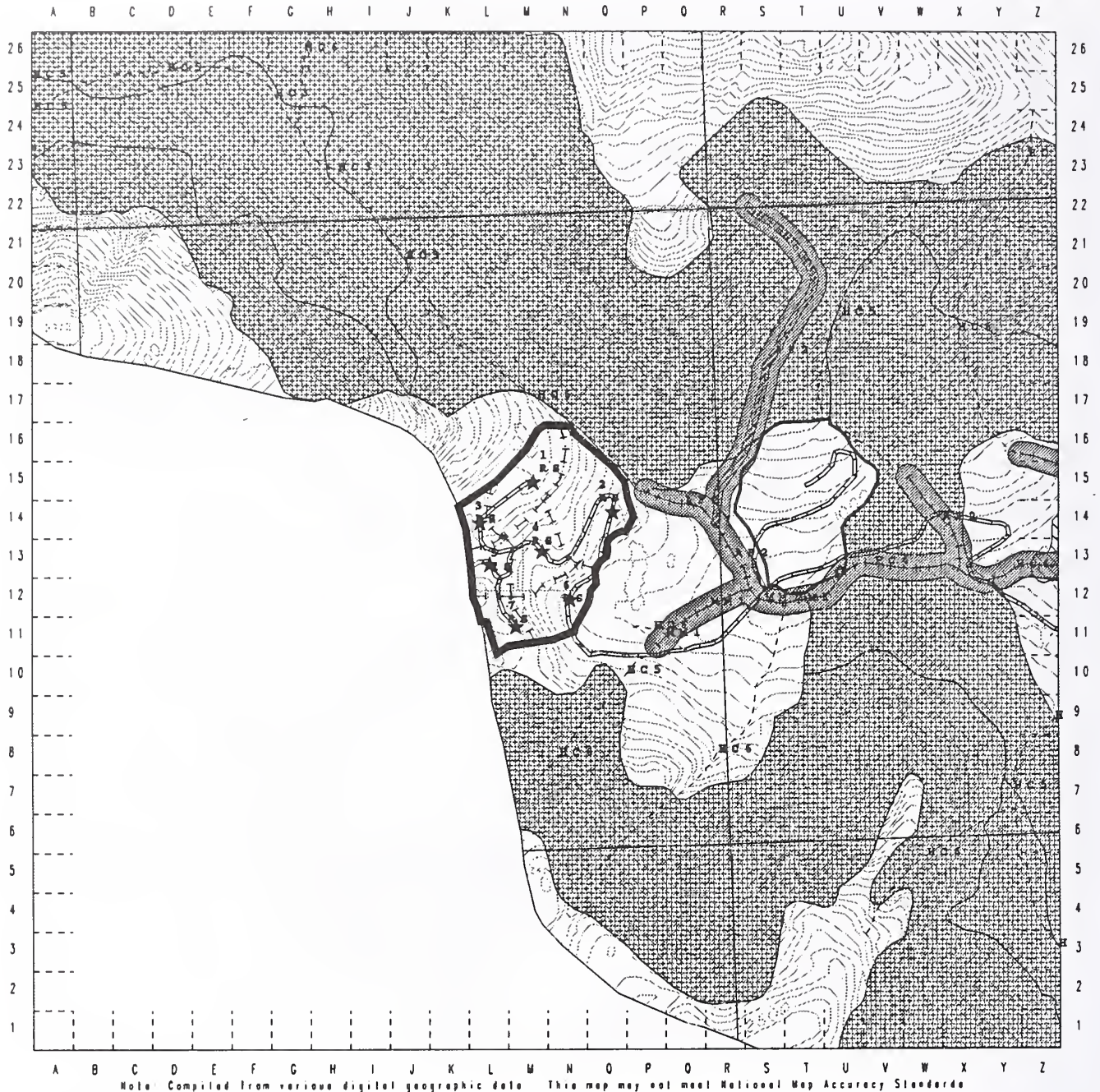
SILVICULTURE INPUT

Moderate productivity with small areas of high elevation, high mass movement as well as Hydric soils. Planting will be required, using high elevation Sitka spruce or Alaska yellow cedar if available. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 456 DEIS# 80

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u06/stall/uc/draftcard/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Wasa Movement Index 4 Soil

Volc 4 - 16.8

Volc 5 - 0.4

Volc 6 - 12

Volc 7 - 0

Total Acres - 41.1

Potential MBF - 1120.2

Quarter Quad - KTHC5HE

VCU Number - 744

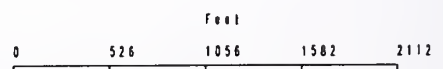
Photo Number - 1890-182

Alternative Pattern - 000050

* Landing



Eagle Nest



LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Stock Line

SH Shovel Yarding

Projection - Stoleplone

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 81 Planned Acres: 29.1 Estimated Volume: 927.7 In Alternatives: 2.0, 0, 5
Silvicultural System: Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-10 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 462 Original LSTA Unit: 744-462

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 26.8 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 2.4 Class 5: 24.3 Class 6: 0.0 Class 7: 0.0 Low Productive 2.3
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 29.1 Primary VQO: MM Recreation: P1
Mass movement index: Low 3.5 Medium 0.0 High 0.0 Very High 25.6 Wetland 3.5 Mix Wetland 25.6
% of High Value Habitat: Deer- 68% Martin- 68% Otter- 0% Eagle- 0% Black Bear- 68%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Slopes above this unit have a very-high landslide potential, MMI=4 (BMP 13.5). Recommend that the backline be located at the foot of this slope (BMP 13.2). NRB 9/18/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Southeastern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary or final road location (gain maximum deflection angle) as required. Northernmost portion of unit may overlap into MMI 4 soils; verify and adjust unit boundary as necessary.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

One water quality streams flows through the middle of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/18/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. 9/18/95

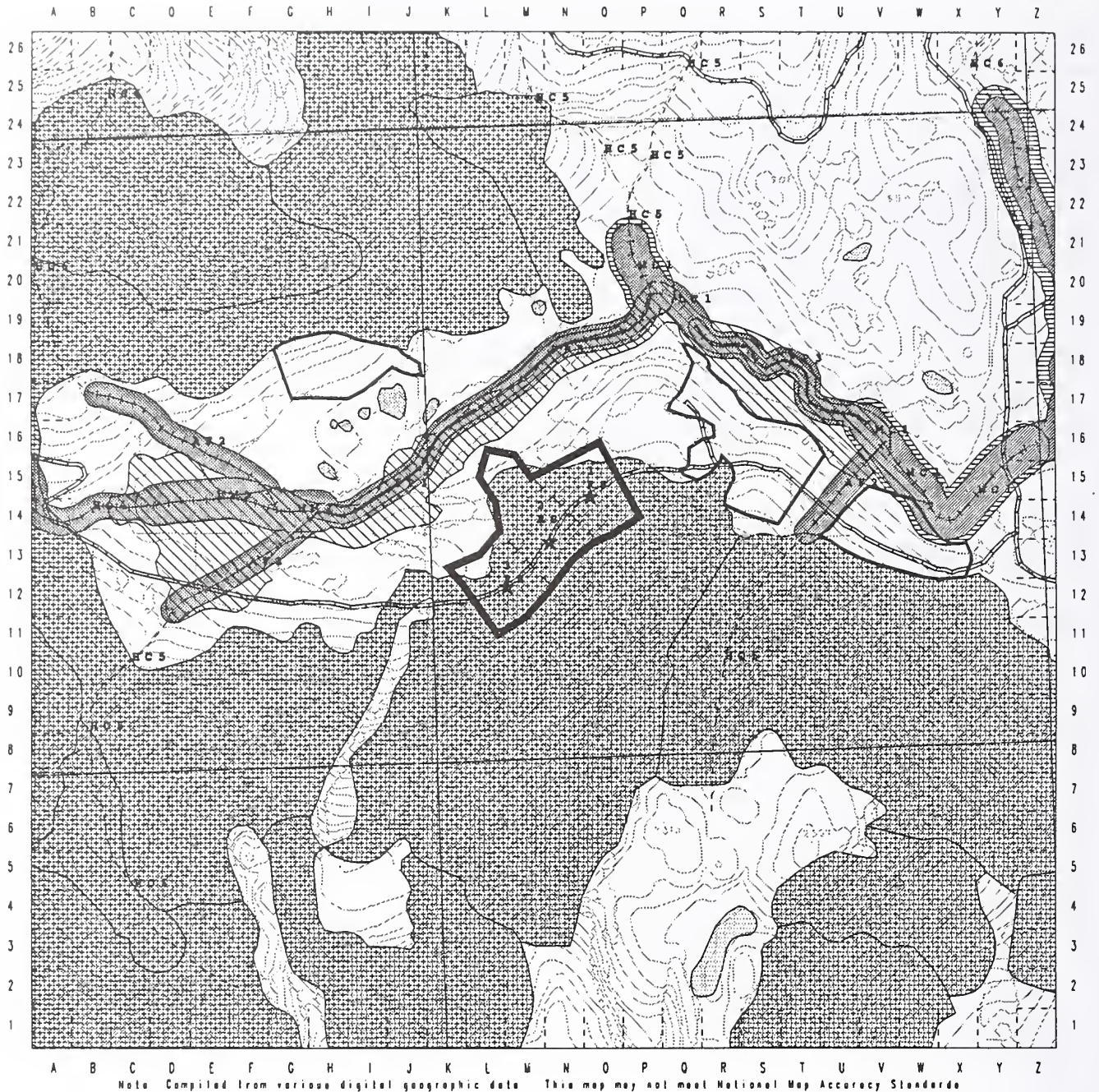
SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using high elevation Sitka spruce or Alaska yellow cedar if available. (6 acres) 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 462 DEIS# 81

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s08/stall/uc/drnlcard/dcl095.nml



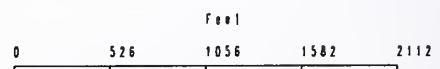
Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Road | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Settling Line | | Body of Water |
| | Other UC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index 4 Soil |
- LOGGING SYSTEMS Abbrev.
- RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding
- Projection - Stateplane

Volc 4 - 2.4
Volc 5 - 24.3
Volc 6 - 0
Volc 7 - 0
Total Acres - 29.1
Potential MBF - 927.7
Quarter Quad - KTHCSNE
VCU Number - 744
Photo Number - 1890-10
Alternative Pattern - 020050
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 82 Planned Acres: 19.4 Estimated Volume: 800.1 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-10 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 464 Original LSTA Unit: 744-464

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 29.2 Nonforested 0.0 Aspect: NE
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 17.3 Class 7: 0.0 Low Productive 2.8
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 32.0 Primary VQO: MM Recreation: P1
 Mass movement index: Low 6.6 Medium 25.4 High 0.0 Very High 0.0 Wetland 32.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Southeast end of this unit contains some forested wetland (BMP 12.5). This area is suitable for shovel yarding (BMP 13.9). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Southern portion of planned unit appears to be a blindlead depending on final road location. Verify feasibility and modify unit boundary, final road location, or access southern portion of unit with a temp road.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

This unit is divided into two parts by a Class II stream (BMP 12.6) requiring a 100 foot TTRA buffer (BMP 12.6a). The northern unit boundary is parallel to a Class II stream and must maintain a 100 foot buffer. SPL 1/3/95
 Two water quality streams are located in the northwest (K-14) and southeast (Q-11) ends of this unit (BMP 12.6a). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/21/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/21/95

SILVICULTURE INPUT

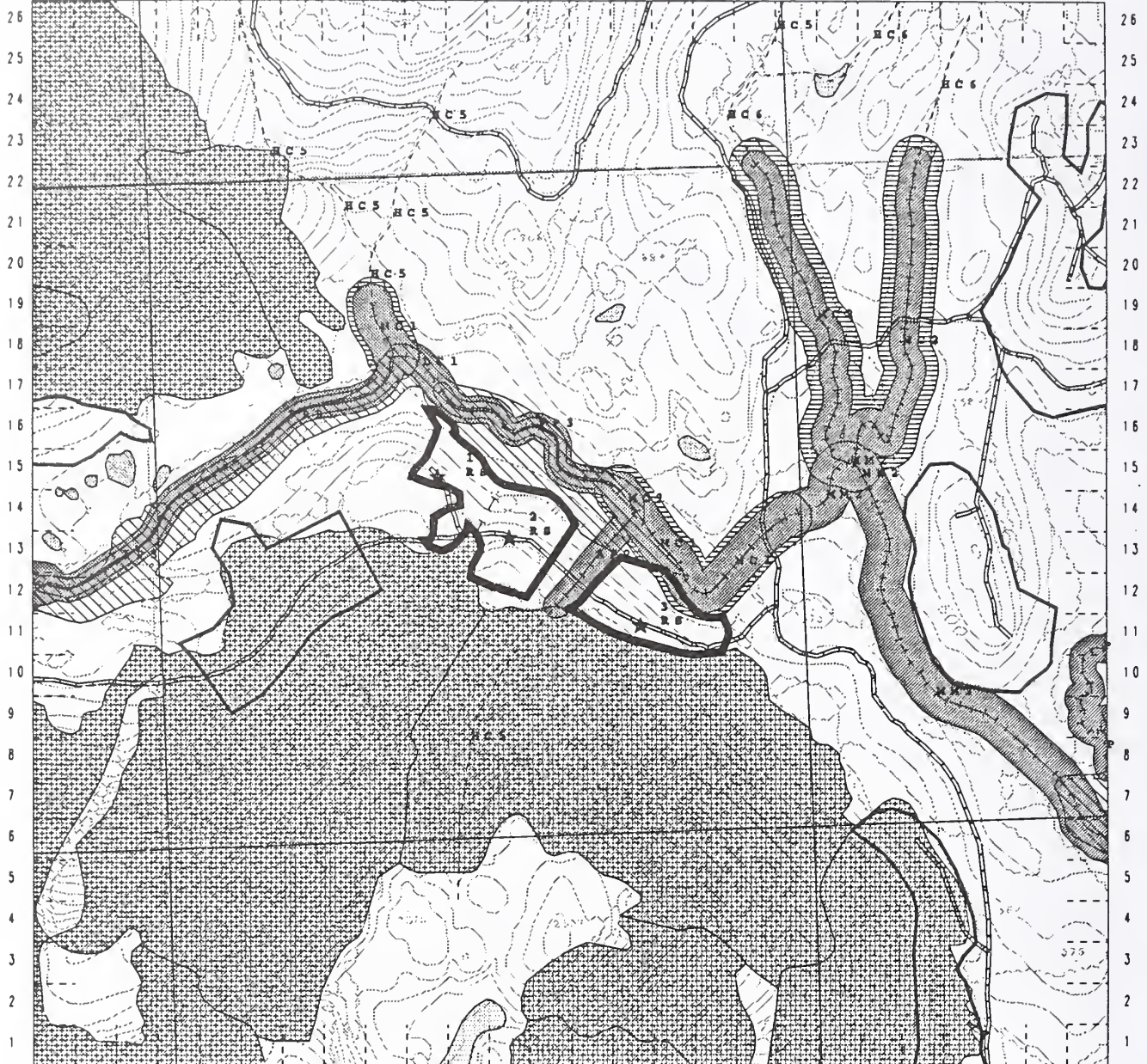
High productivity with small areas of Hydric soils as well as an old slide. Planting will be required, using Sitka spruce and Alaska yellow cedar if available. (3 acres) CBG 10/17/95.

Upper Carroll Study Area Unit Schematic - Unit 464 DEIS# 82

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/uc/draftcar4/de1095.unl



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Redwood Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Settling Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 0
Volc 6 - 17.3
Volc 7 - 0
Total Acres - 19.4
Potential MBF - 800.1
Quarter Quad - KINCSNE
VCU Number - 744
Photo Number - 1890-10
Alternative Pattern - 020050
★ Landing



Eagle Nest



Projection - Stateplane

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 83 Planned Acres: 24.3 Estimated Volume: 545.0 In Alternatives: 2, 0, 4, 5
 Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-10 Logging systems: RS
 Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 466 Original LSTA Unit: 744-466

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 14.7 Spruce 0.0 Mixed Hem/Spr 2.2 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 14.7 Class 5: 2.2 Class 6: 0.0 Class 7: 0.0 Low Productive 7.4
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 24.3 Primary VQO: MM Recreation: P1
 Mass movement index: Low 2.5 Medium 0.0 High 0.0 Very High 21.8 Wetland 2.5 Mix Wetland 21.8
 % of High Value Habitat: Deer- 82% Martin- 82% Otter- 0% Eagle- 0% Black Bear- 82%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Small area (about 2 acres) of very high landslide potential, MMI=4, is located in the middle (N-14) (BMP 13.5).
 Recommend split yarding on this site and retain as wildlife island (BMP 13.9). No concerns in rest of the unit. NRB
 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
 Western portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

Two water quality streams are located in this unit (BMP 12.6a). One is in the north end (N-15) of the unit. Recommend
 that slash be cleaned from channel after harvest (BMP 13.16). The second stream is in the south end of the unit
 (N-11). Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across
 the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16).
 Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Retain MMI=4 soils area as a wildlife island (N-14).

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/21/95

SILVICULTURE INPUT

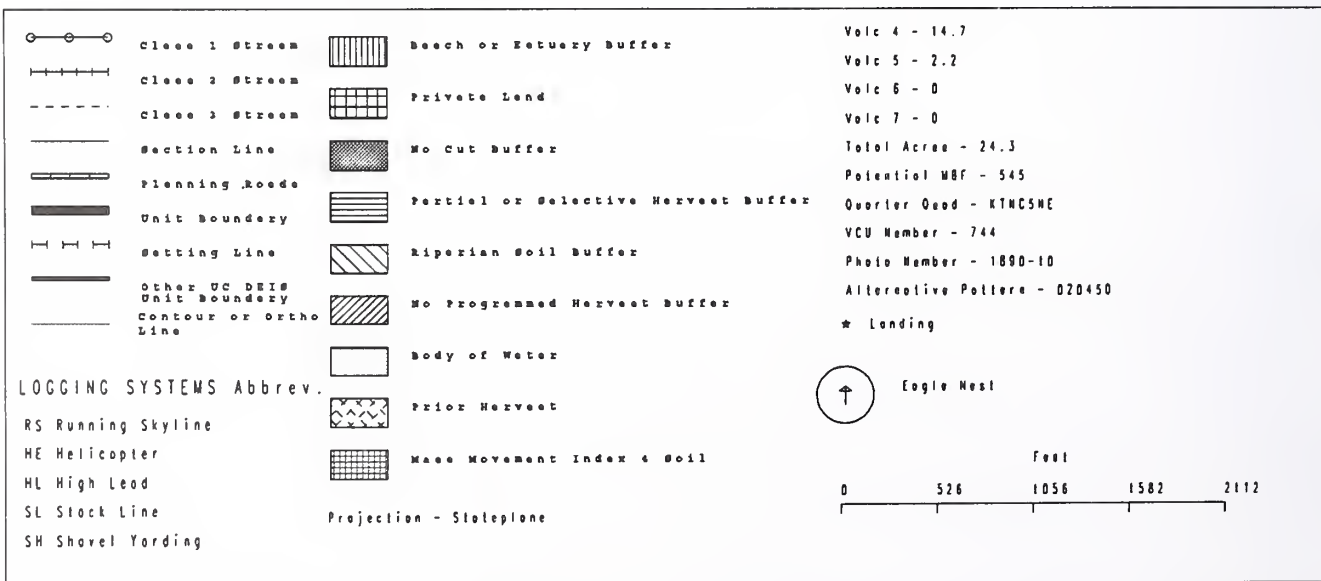
High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using
 high elevation Sitka spruce or Alaska yellow cedar if available. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 466 DEIS# 83

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/wc/draftcard/dc1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 84 Planned Acres: 20.6 Estimated Volume: 558.2 In Alternatives: 2, 0, 0, 5
 Silvicultural System : Shelterwood Settings 1 Quad: KTNCSNE Photo: 1890-8 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 471 Original LSTA Unit: 744-471

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 20.1 Nonforested 0.0 Aspect: NE
 Volume class breakdown: Class 4: 20.1 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.5
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 20.6 Primary VQO: MM Recreation: Pl
 Mass movement index: Low 0.0 Medium 0.0 High 20.6 Very High 0.0 Wetland 0.0 Mix Wetland 20.6
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit

FISH/WATERSHED INPUT

One water quality stream is located in this unit (M-14 to O-15) (BMP 12.6a). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/21/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/21/95

SILVICULTURE INPUT

Low productivity with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 471 DEIS# 84

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/staff/uc/draftcard/dcl095 owl



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beech or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Road | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Setting Line | | Body of Water |
| | Other DC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index & Soil |

Volc 4 - 20.1
 Volc 5 - 0
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 20.6
 Potential MBF - 558.2
 Quarter Quad - KTHCSHC
 VCU Number - 744
 Photo Number - 1890-8
 Alternative Pattern - 020050
 * Landing

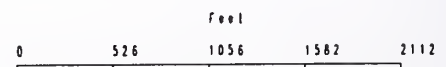
LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Slack Line
 SH Shovel Yarding

Projection - Stoleplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 85 Planned Acres: 49.6 Estimated Volume: 1,531.7 In Alternatives: 2, 0, 0, 5
Silvicultural System : ShelterwoodSettings: 1 Quad: KTNC5NE Photo: 1890-6 Logging systems: HE
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 494 Original LSTA Unit: 744-494

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 42.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
Volume class breakdown: Class 4: 0.0 Class 5: 42.6 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 49.6 Primary V00: MM Recreation: P1
Mass movement index: Low 6.1 Medium 0.0 High 43.5 Very High 0.0 Wetland 49.6 Mix Wetland 0.0
% of High Value Habitat: Deer- 40% Martin- 40% Otter- 0% Eagle- 0% Black Bear- 80%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Much of this unit is made up of high landslide potential, MMI=3, soils (BMP 13.5). Planned helicopter yarding will provide full log suspension and minimize potential for soil disturbance (BMP 13.9). NRB 9/21/95.

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

Several water quality streams are located in this unit (M-13, M-12, M-10 to O-11) (BMP 12.6a). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

Unit contains several V-notches. For management recommendations see FISH/WATERSHED INPUT above. NRB 9/21/95

SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 494 DEIS# 85

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/staff/uc/draftcard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beach or Wetland Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Roads | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Setting Line | | Body of Water |
| | other UC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index & Soil |

Volc 4 - 0
Volc 5 - 42.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 49.6
Potential MRF - 1531.7
Quarter Quad - KTHCSNE
VCU Number - 744
Photo Number - 1890-6
Alternative Pattern - 020050
★ Landing

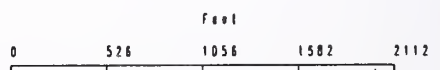


Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stotoplane



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 86 Planned Acres: 14.7 Estimated Volume: 384.9 In Alternatives: 2, 0, 0, 5
Silvicultural System: Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-6 Logging systems: RS SH
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 497 Original LSTA Unit: 744-497

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 13.0 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 11.3 Class 5: 1.7 Class 6: 0.0 Class 7: 0.0 Low Productive 1.7
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 14.7 Primary VQO: MM Recreation: Pl
Mass movement index: Low 1.3 Medium 0.0 High 13.4 Very High 0.0 Wetland 14.1 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of a mixture of wetland and upland soils (BMP 12.5). Recommend shovel yarding where terrain is suitable and at least partial log suspension when cable yarding (BMP 13.9). Road construction should avoid wetlands if possible (BMP 14.3). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Shovel. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is bordered to the west by a Class I and to the north by a Class II stream (BMP12.6). The Class I will require a minimum 200ft TTRA buffer and Class II requiring a minimum 100ft TTRA buffer (BMP 12.6a). SPL 1/3/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. 9/21/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 497 DEIS# 86

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/s1011/uc/dra/cord/c1095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Redberry Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest

Volc 4 - 11.3
Volc 5 - 1.7
Volc 6 - 0
Volc 7 - 0
Total Acres - 14.7
Potential MBF - 384.9
Quarter Oad - KINCSE
VCU Number - 744
Photo Number - 1890-6
Alternative Pattern - 020050
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Mass Movement Index & Soil

Projection - Stoleplone



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 87 Planned Acres: 10.3 Estimated Volume: 292.5 In Alternatives: 0, 0, 0, 0
Silvicultural System: Clearcut Settings: 2 Quad: KTNC5NE Photo: 1890-2 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 523 Original LSTA Unit: 744-523

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 10.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
Volume class breakdown: Class 4: 8.9 Class 5: 1.4 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 10.3 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 0.0 Medium 6.5 High 3.8 Very High 0.0 Wetland 6.5 Mix Wetland 3.8
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
Full suspension is required across the Class III stream in the Southern portion of the unit. Modify unit boundary if required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)

FISH/WATERSHED INPUT

There is one Class II stream that flows along the northeast boundary that will require a 100 foot TTRA buffer.
One water quality stream is located in this unit (M-14 to N-12) (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Timber harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Beach and estuary buffer will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. Final road locations across Carroll Creek will need to be reviewed during layout/prior to construction. RL 9/30/95.

GEOLOGICAL INPUT

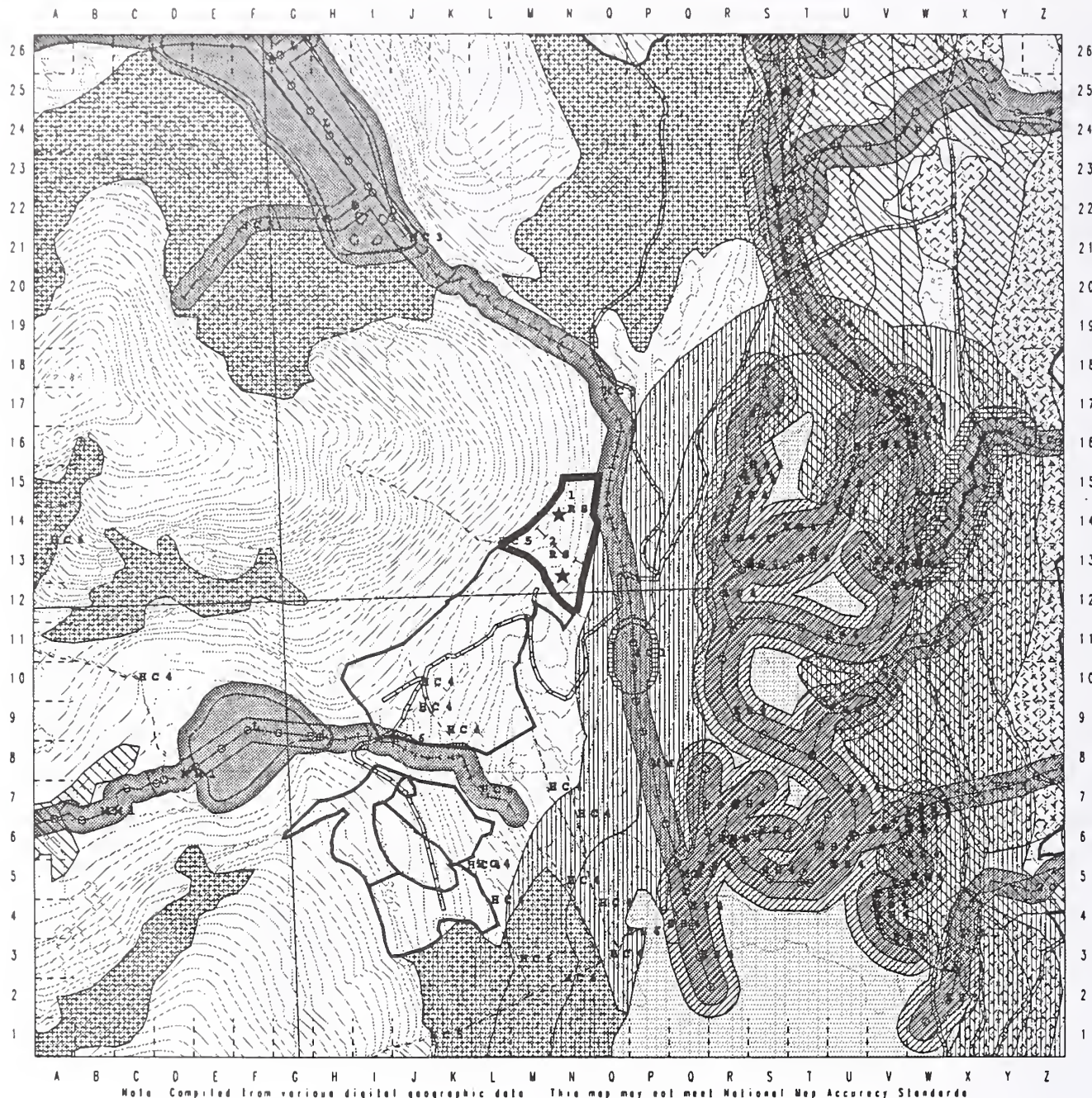
No concerns. NRB 9/21/95

SILVICULTURE INPUT

High productivity with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 523 DEIS# 87

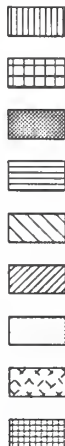
Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/nc/drallicard/et1095 owl



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other DC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 8.9
Volc 5 - 1.4
Volc 6 - 0
Volc 7 - 0
Total Acres - 10.3
Potential MRF - 292.5
Deerler Dead - KTHCSHE
VCU Number - 744
Photo Number - 1890-2
Alternative Pattern - 000000
★ Landing

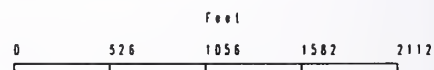
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 88 Planned Acres: 8.4 Estimated Volume: 132.6 In Alternatives: 0, 0, 0, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-2 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D58A WAA: 406 NOI Unit: 532 Original LSTA Unit: 744-532

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 2.9 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: NE
Volume class breakdown: Class 4: 2.1 Class 5: 0.8 Class 6: 0.0 Class 7: 0.0 Low Productive 5.5
Archeology 0-100: 0.0 100-200: 0.0 Seen 7.4 Not Seen 0.9 Primary VQO: M Recreation: RM
Mass movement index: Low 8.4 Medium 0.0 High 0.0 Very High 0.0 Wetland 8.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of forested wetland (BMP 12.5). Recommend at least partial log suspension when yarding (BMP 13.9). Road construction should avoid areas of open muskeg if possible (BMP 14.3). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Southern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

The northern boundary of this unit is adjacent to a Class II stream and will require a 100 foot TTRA buffer. SPL 1/3/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Beach, estuary and adjacent uncut timber will help to screen unit. Non-forested opening to the east will help harvest to blend also. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. Access road across Carroll Creek will need to be re-surveyed when final road location has been completed/prior to construction. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/21/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (4 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 532 DEIS# 00

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, jw08/stall/uc/draftcard/dct095 eml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

LOGGING SYSTEMS Abbrev.

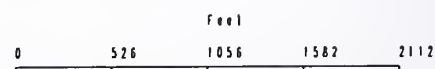
RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 2.1
Volc 5 - 0.8
Volc 6 - 0
Volc 7 - 0
Total Acres - 8.4
Potential MBF - 132.6
Quarter Quad - KTHCSHE
VCU Number - 744
Photo Number - 1890-2
Alternative Pattern - 000000
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 89 Planned Acres: 7.4 Estimated Volume: 191.1 In Alternatives: 0, 0, 0, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-2 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D58A WAA: 406 NOI Unit: 533 Original LSTA Unit: 744-533

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 6.8 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
Volume class breakdown: Class 4: 6.8 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.6
Archeology 0-100: 0.0 100-200: 0.0 Seen 7.4 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 7.4 Medium 0.0 High 0.0 Very High 0.0 Wetland 7.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists mostly of forested wetlands (BMP 12.5). Recommend at least partial log suspension when yarding to minimize wetland disturbance (BMP 13.9). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

One water quality stream is located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll Inlet. Identified VQO is modification. Beach, estuary and adjacent uncut timber help screen unit. Natural opening to the south will help unit blend into landscape. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. Access road across Carroll Creek will need to be re-surveyed after final road location is surveyed/prior to construction. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/21/95

SILVICULTURE INPUT

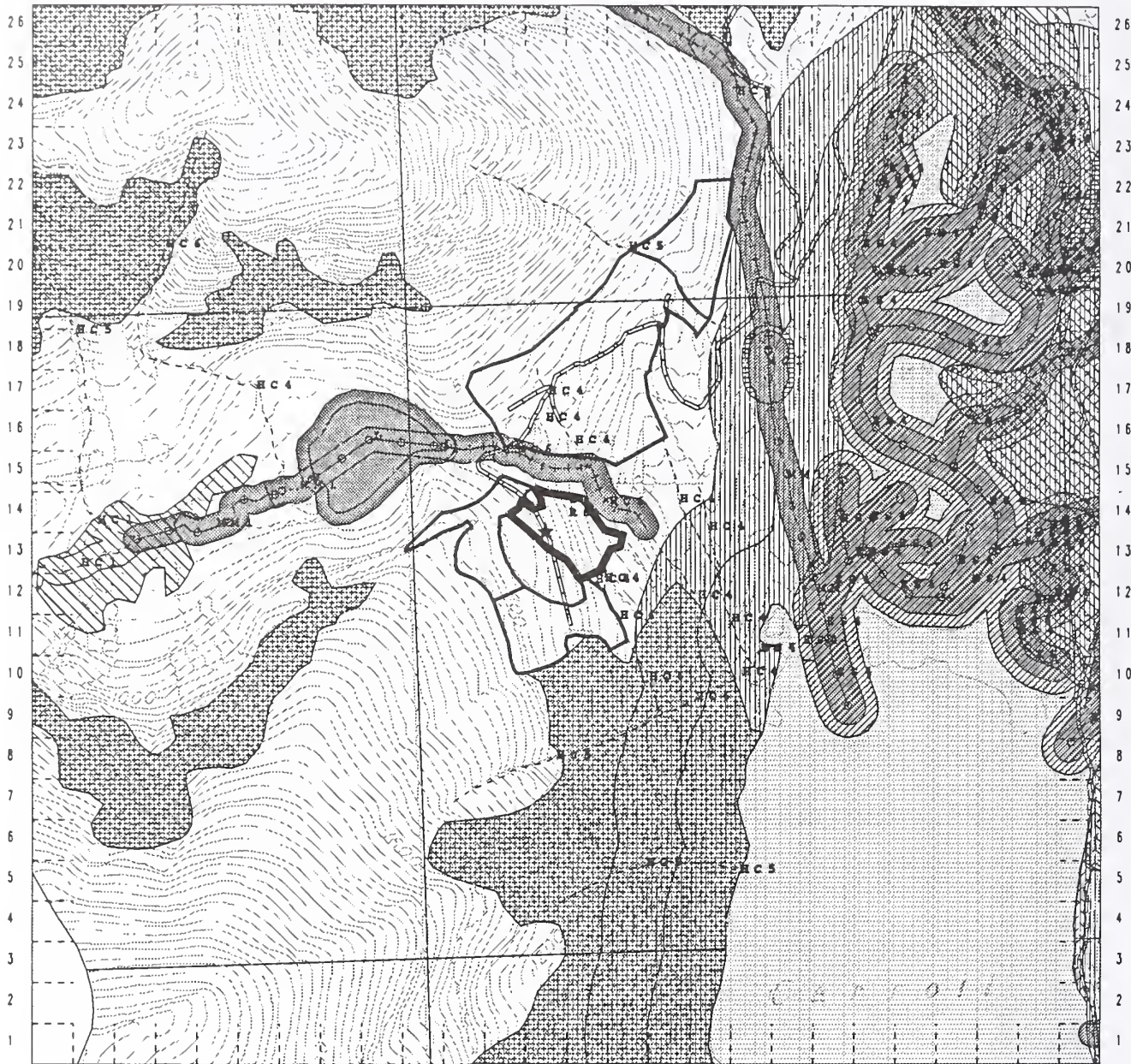
Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 533 DEIS# 89

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draftcard/del095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

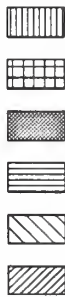


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Ketuery Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest

Volc 4 - 6.8
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 7.4
Potential MBF - 191.1
Operator Code - KINCSNE
VCU Number - 744
Photo Number - 1890-2
Alternative Pollers - 000000
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding



Projection - Stolephone



Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 90 Planned Acres: 10.2 Estimated Volume: 208.9 In Alternatives: 2, 0, 0, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5NE Photo: 1890-2 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D58A WAA: 406 NOI Unit: 534 Original LSTA Unit: 744-534

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 6.4 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
Volume class breakdown: Class 4: 6.4 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 3.8
Archeology 0-100: 0.0 100-200: 0.0 Seen 10.2 Not Seen 0.0 Primary VQO: M Recreation: RM
Mass movement index: Low 10.2 Medium 0.0 High 0.0 Very High 0.0 Wetland 10.2 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists mainly of forested wetlands (BMP 12.5). Recommend at least partial log suspension when yarding (BMP 13.9). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 9/21/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Beach and estuary buffers will help screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/21/95

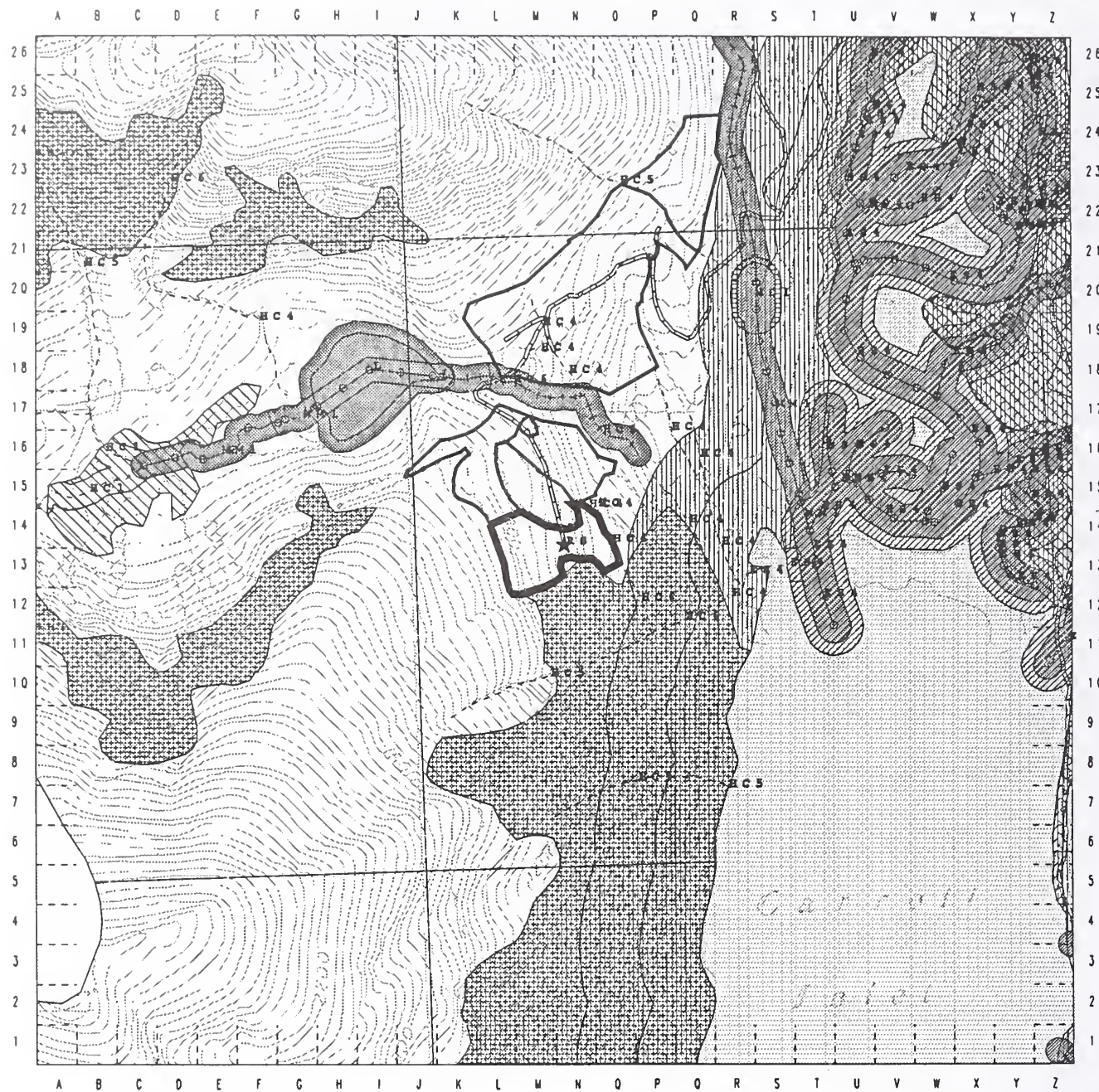
SILVICULTURE INPUT

This unit has high volume, with small areas of Hydric soils. Monitor.

Upper Carroll Study Area Unit Schematic - Unit 534 DEIS# 90

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s08/staff/ac/draft/crd/4c1095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other DC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 6.4
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 10.2
Potential MBF - 208.9
Quarter Quad - KTHC5NE
VCU Number - 744
Photo Number - 1890-2
Alternative Pattern - 020000
★ Landing



Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slick Line
SH Shovel Yarding

Projection - Stoleplane



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 91 Planned Acres: 29.6 Estimated Volume: 949.6 In Alternatives: 0, 0, 0, 0
Silvicultural System : Clearcut Settings: 4 Quad: KTNC5NE Photo: 1890-186 Logging systems: RS
Mgt Area: K32 VCU: 737 Watershed: C41B WAA: 510 NOI Unit: 545 Original LSTA Unit: 737-545

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)
Forest type: Cedar 0.0 Hemlock 29.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 10.2 Class 5: 19.4 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 29.6 Primary V00: M Recreation: RM
Mass movement index: Low 0.2 Medium 0.0 High 29.4 Very High 0.0 Wetland 22.4 Mix Wetland 7.2
% of High Value Habitat: Deer- 67% Martin- 67% Otter- 0% Eagle- 0% Black Bear- 67%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

Three water quality streams are located in this unit (0-12, N-15) (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/21/95

SILVICULTURE INPUT

High productivity with good natural regeneration. No concerns. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 545 DEIS# 91

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/vc/draftcard/dct095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 10.2
Volc 5 - 19.4
Volc 6 - 0
Volc 7 - 0
Total Acres - 29.6
Potential MRF - 949.6
Quarter Quad - KTN055E
VCU Number - 737
Photo Number - 1890-186
Alternative Pattern - 000000
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 92 Planned Acres: 73.8 Estimated Volume: 2,093.0 In Alternatives: 2, 0, 0, 5
Silvicultural System : Clearcut Settings: 6 Quad: KTNC5NE Photo: 1890-186 Logging systems: RS SH
Mgt Area: K32 VCU: 737 Watershed: C41B WAA: 510 NOI Unit: 547 Original LSTA Unit: 737-547

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)
Forest type: Cedar 0.0 Hemlock 70.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 53.2 Class 5: 17.4 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 73.8 Primary VQO: M Recreation: RM
Mass movement index: Low 27.0 Medium 0.0 High 46.9 Very High 0.0 Wetland 70.2 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The east-central (N-13) part of this unit contains some high landslide potential soils, MMI=3 (BMP 13.5). There are some forested wetlands in the western part of the unit (L-13 to 15) (BMP 12.5). Recommend at least partial log suspension when yarding these areas (BMP 13.9). Avoid road location on wetlands, if possible (BMP 14.3). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

Two water quality streams are located in this unit (M-13 to J-15 and P-15) (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 9/21/95

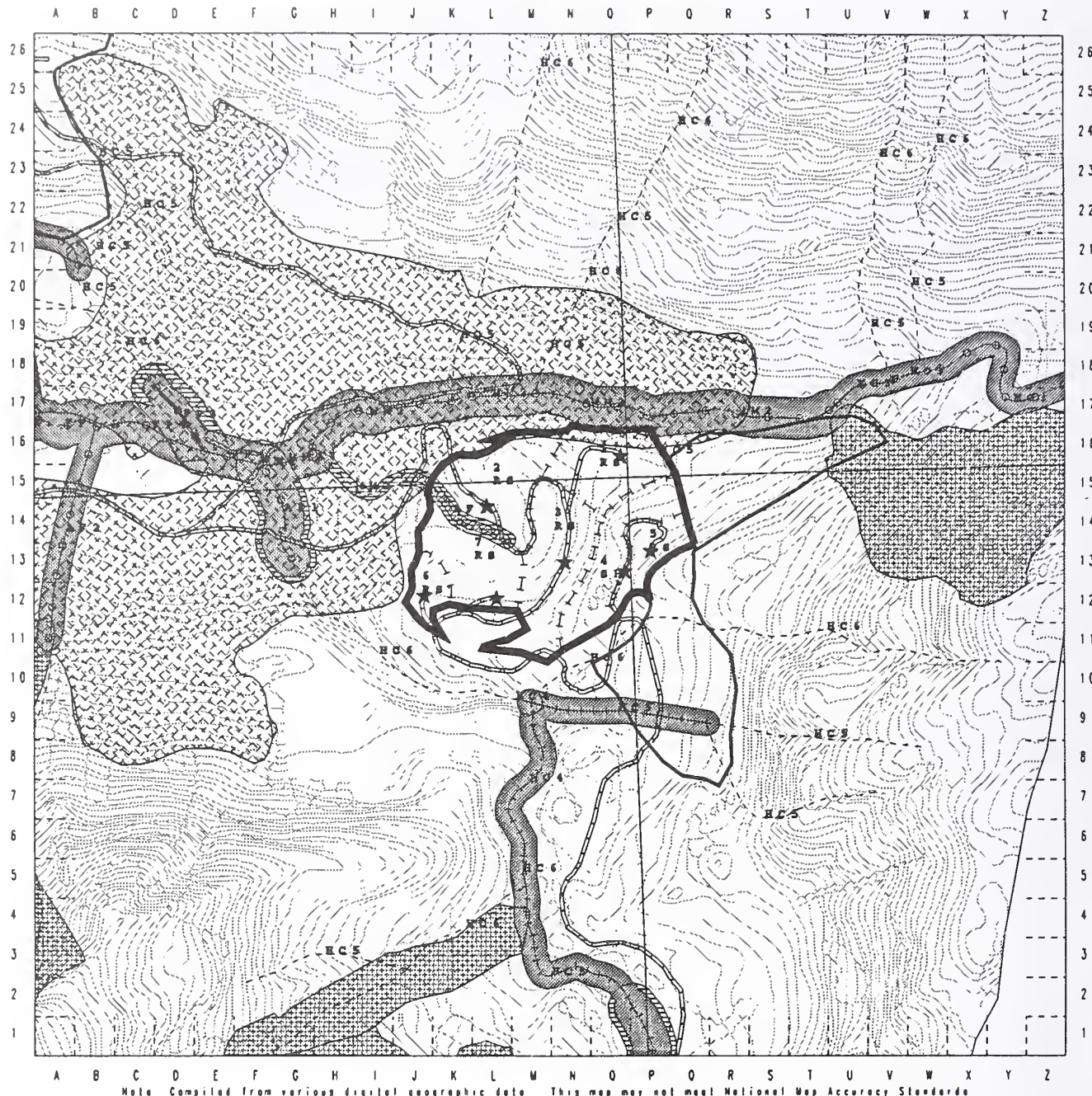
SILVICULTURE INPUT

Moderate productivity with areas of mass movement and Hydric soils that will need to be planted. (12 acres)
Unit boundary should abut adjacent second growth unit to avoid isolating small patches of timber. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 547 DEIS# 92

Mapscale 1:15840 (4 inch to Mile)

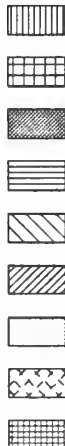
Created 11-4-95, /u06/staff/nc/draftcurd/ec1095.unl



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 53.2
Volc 5 - 17.4
Volc 6 - 0
Volc 7 - 0
Total Acres - 73.8
Potential MBR - 2093
Quarter Quad - K1N055C
VCU Number - 737
Photo Number - 1890-186
Alternative Pattern - 020050
* Landing

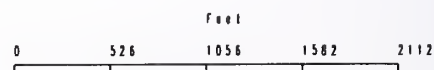
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 93 Planned Acres: 56.8 Estimated Volume: 1,732.8 In Alternatives: 2, 0, 0, 0
 Silvicultural System : Clearcut Settings: 4 Quad: KTNC5NE Photo: 1890-198 Logging systems: RS
 Mgt Area: K32 VCU: 737 Watershed: C41B WAA: 510 NOI Unit: 572 Original LSTA Unit: 737-572

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 54.6 Spruce 0.0 Mixed Hem/Spr 0.2 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 24.7 Class 5: 30.0 Class 6: 0.0 Class 7: 0.0 Low Productive 1.7
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 56.8 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.3 Medium 25.8 High 30.8 Very High 0.0 Wetland 0.3 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Part of this harvest unit (0-12) consists of very high landslide potential soils, MMI=4 (BMP 13.5). Vertical rock cliffs are common in this area. Recommend that this area be deleted from the proposed unit. Forested wetlands are located along the west unit boundary (K-15 to 0-11) (BMP 12.5). Recommend at least partial log suspension be achieved when yarding these wetlands (BMP 13.9). Construction of the road segment through setting 4 will require some full-bench design (BMP 14.7). Waste material should be end-hauled and deposited on a stable site (BMP 14.12). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Northeastern portion of planned unit appears to be a blindlead. South portion of planned unit is across a large Class II stream which will require a 100' buffer. Full suspension is required (need Stream Protection Plan). Verify feasibility of retaining Southernmost portion of planned unit or modify unit boundaries as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit has one AHMU Class stream flowing through the sw part (K-13 to 0-10) (BMP 12.6). A variable-width buffer is recommended. One water quality stream is located in this unit (0-11) (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95
 Due to temperature sensitivity concerns, all trees less than 12 inches DBH within 35 feet of class III streams will remain standing or a windfirm buffer will be delineated.

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

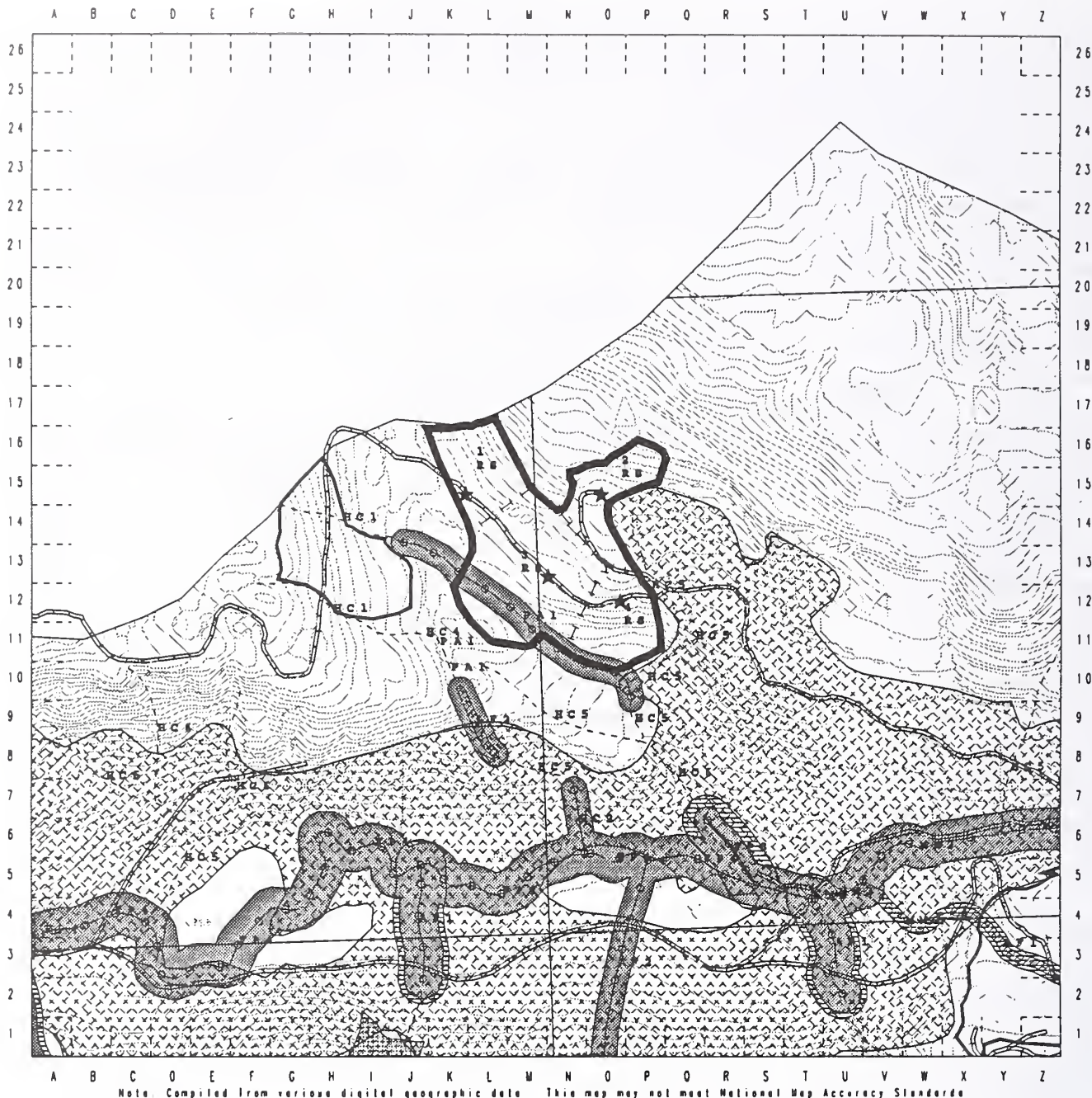
No concerns. NRB 9/21/95

SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using Alaska yellow cedar if available (8 acres). Unit should abut adjacent second growth to avoid isolating small wind-prone patches of standing timber. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 572 DEIS# 93

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s00/staff/uc/draft/cad/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mesa Movement Index & Soil

Volc 4 - 24.7
Volc 5 - 30
Volc 6 - 0
Volc 7 - 0
Total Acres - 56.8
Potential MBF - 1732.8
Quarter Quad - KTH055E
VCU Number - 737
Photo Number - 1890-198
Alternative Pattern - 020000
★ Landing

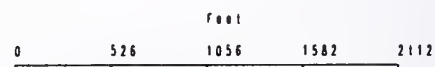
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Spherplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 94 Planned Acres: 22.6 Estimated Volume: 659.5 In Alternatives: 0, 0, 0, 0
Silvicultural System : Clearcut Settings: 2 Quad: KTND5SE Photo: 1890-186 Logging systems: RS
Mgt Area: K32 VCU: 737 Watershed: C41B WAA: 510 NOI Unit: 584 Original LSTA Unit: 737-584

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 16.3 Spruce 0.0 Mixed Hem/Spr 6.0 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 16.3 Class 5: 6.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 22.6 Primary VQO: M Recreation: SFNM
Mass movement index: Low 0.0 Medium 4.6 High 15.1 Very High 2.9 Wetland 15.1 Mix Wetland 0.0
% of High Value Habitat: Deer- 88% Martin- 88% Otter- 0% Eagle- 0% Black Bear- 88%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Most of the lower parts (K-13 to O-14) of this unit is forested wetlands (BMP 12.5). These areas would be suitable for shovel yarding (BMP 13.9). Road location should avoid wetland areas, if possible, and be located on the foot of the adjacent side-hill (BMP 14.3). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

This unit is adjacent to a TTRA Class I stream and requires a minimum 100 foot buffer.
A water quality stream is located along the western edge of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). A variable width slope-break buffer is recommended (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

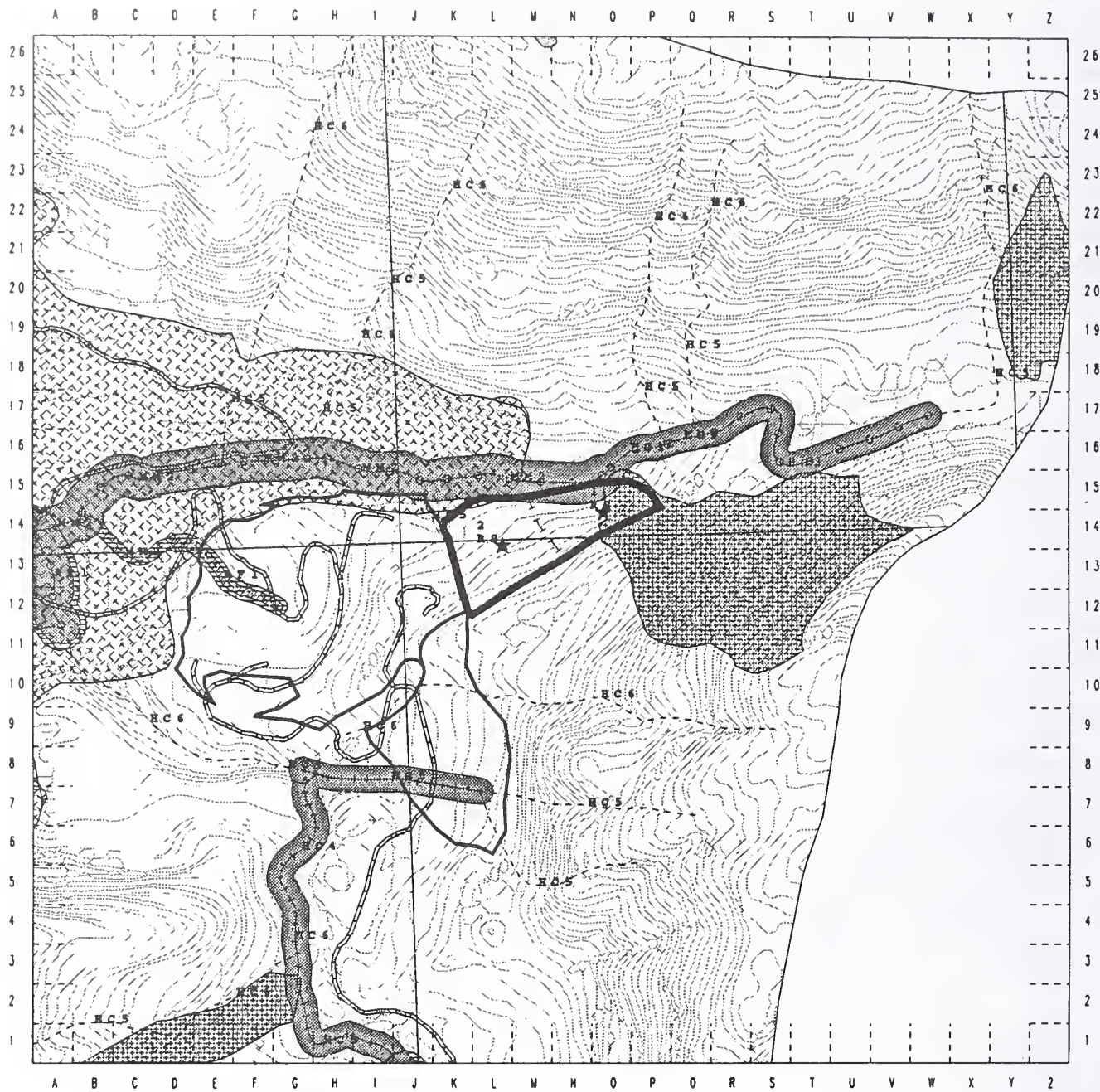
No concerns. NRB 9/21/95

SILVICULTURE INPUT

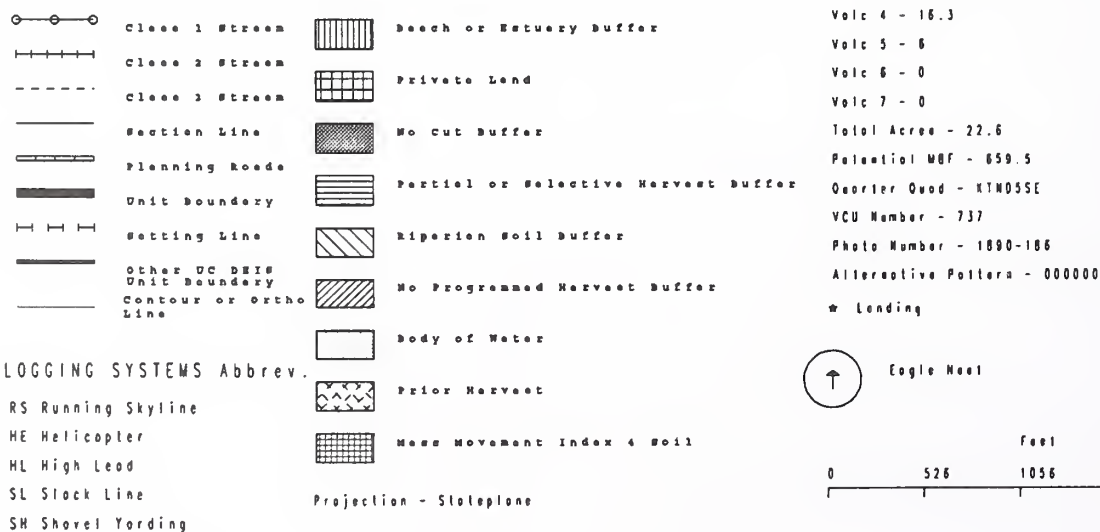
High productivity with small areas of Hydric and high mass-movement potential soils that will need to be planted. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 504 DEIS# 94

Mopscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/stall/uc/draftcard/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 95 Planned Acres: 19.6 Estimated Volume: 528.7 In Alternatives: 2, 0, 0, 0
 Silvicultural System : Clearcut Settings: 2 Quad: KTND5SE Photo: 1890-65 Logging systems: RS
 Mgt Area: K32 VCU: 733 Watershed: C41B WAA: 510 NOI Unit: 603 Original LSTA Unit: 733-603

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 19.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 19.1 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.5
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 19.6 Primary VQO: M Recreation: RM
 Mass movement index: Low 1.5 Medium 0.0 High 18.0 Very High 0.0 Wetland 19.6 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists mostly of forested wetlands (BMP 12.5). Recommend at least partial log suspension during yarding to minimize disruption of wetland functions (BMP 13.9). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. NRB 9/21/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres of harvest. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

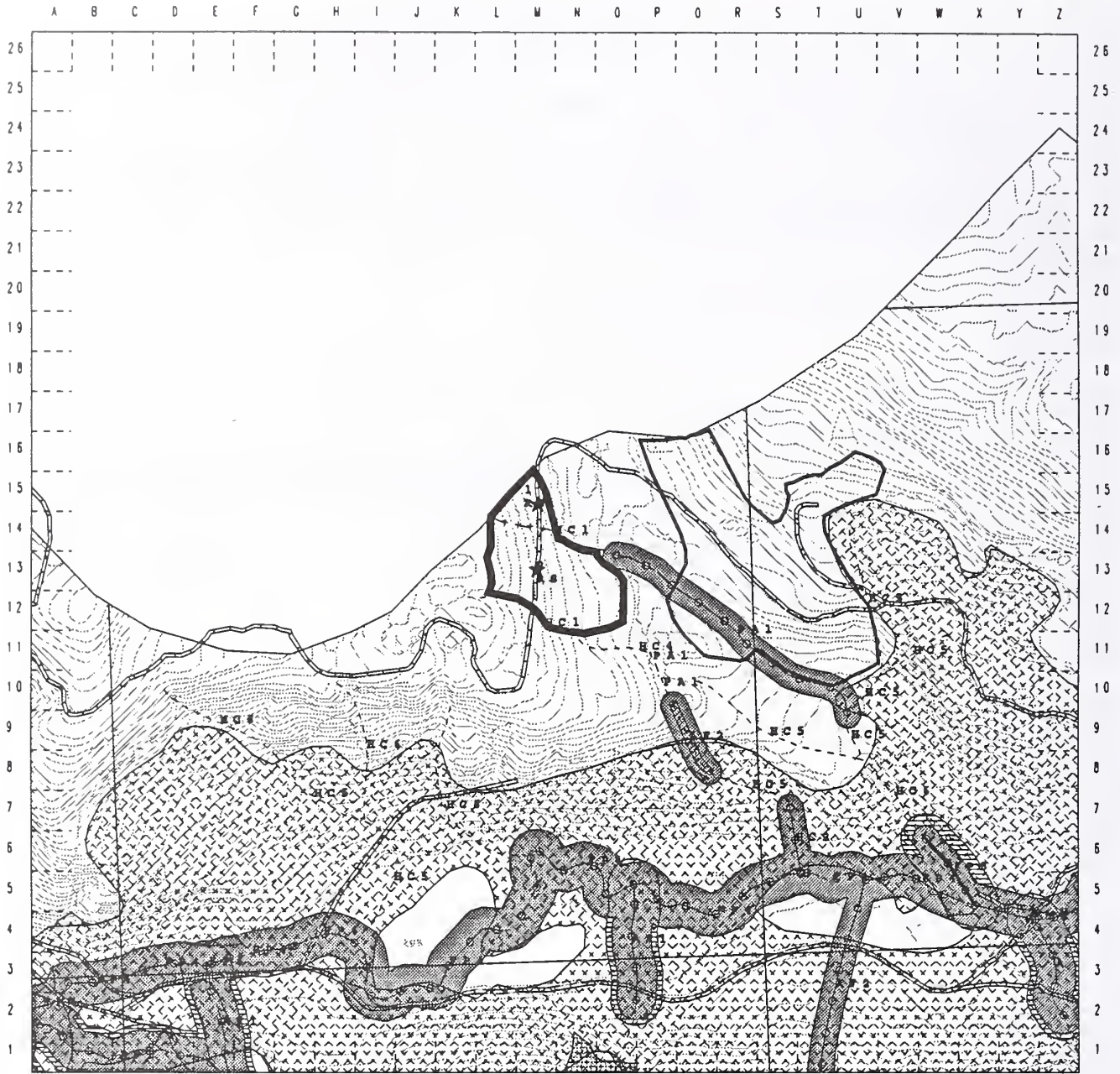
No concerns. NRB 9/21/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 603 DEIS# 95

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/draft/crk/dcl095 eml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplane

Volc 4 - 19.1
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 19.6
Potential MBF - 528.7
Quarter Oad - KTH055C
VCU Number - 733
Photo Number - 1890-65
Alternative Pattern - 020000
★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 96 Planned Acres: 15.4 Estimated Volume: 483.2 In Alternatives: 0, 0, 0, 0
Silvicultural System: Clearcut Settings: 2 Quad: KTND5SE Photo: 1790-63 Logging systems: HE RS
Mgt Area: K32 VCU: 737 Watershed: C41B WAA: 510 NOI Unit: 619 Original LSTA Unit: 737-619

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 14.8 Spruce 0.0 Mixed Hem/Spr 0.2 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 5.4 Class 5: 9.6 Class 6: 0.0 Class 7: 0.0 Low Productive 0.4
Archeology 0-100: 0.0 100-200: 0.0 Seen 15.4 Not Seen 0.0 Primary VOO: M Recreation: RM
Mass movement index: Low 0.4 Medium 0.0 High 15.0 Very High 0.0 Wetland 0.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Most of this unit is made up of high landslide potential soils, MMI=3 (BMP 13.5). Recommend at least partial log suspension during yarding to minimize surface disturbance (BMP 13.9). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Determine feasibility of converting South portion of unit to helicopter yarding or delete.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

One water quality stream (M-13 to L-15) is located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Neets Bay. Identified VOO is modification. Adjacent topographic features and standing uncut timber will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

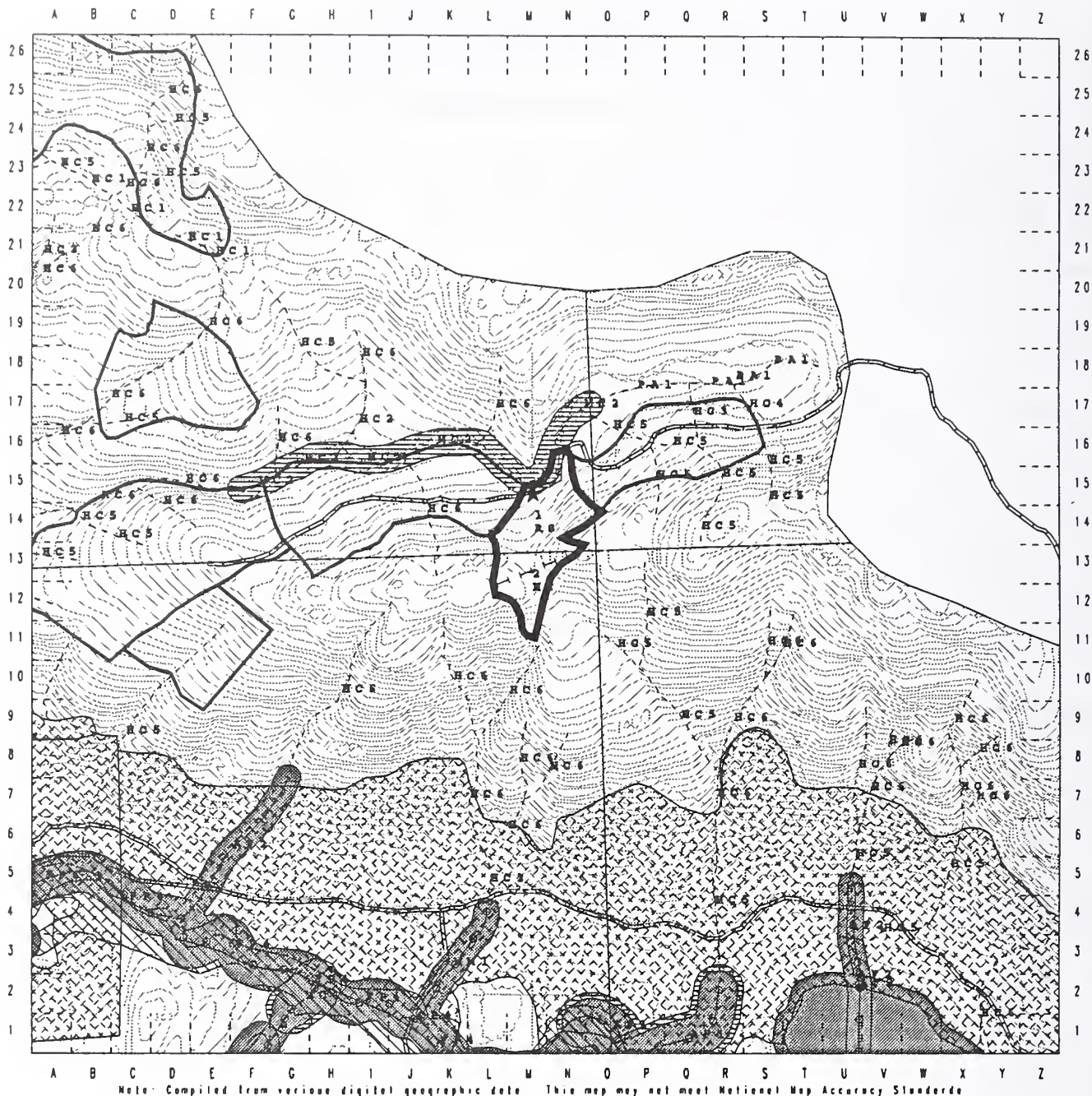
No concerns. NRB 9/21/95

SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using high elevation Sitka spruce and Alaska yellow cedar if available. (3 acres) Consideration should be given to a diameter limit cut leaving all trees 13" DBH and under standing if helicopter yarded. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 619 DEIS# 96

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/druticard/dcl095 uml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Road
- Unit Boundary
- Setting Line
- other UC DEIS Unit Boundary Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 5.4
Volc 5 - 9.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 15.4
Potential WBF - 483.2
Overlaid Quad - KTH05SE
VCU Number - 737
Photo Number - 1790-63
Alternative Pattern - 000000
★ Landing

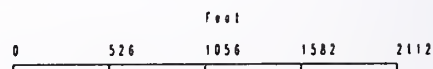


Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Spheroplane



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 97 Planned Acres: 18.6 Estimated Volume: 642.1 In Alternatives: 2, 0, 0, 0
Silvicultural System: Clearcut Settings: 3 Quad: KTND5SE Photo: 1890-65 Logging systems: RS
Mgt Area: K32 VCU: 737 Watershed: C43A WAA: 510 NOI Unit: 620 Original LSTA Unit: 737-620

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 18.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
Volume class breakdown: Class 4: 0.0 Class 5: 18.6 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 18.6 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 0.0 Medium 0.0 High 18.5 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Much of this unit consists of high landslide potential, MMI=3, soils (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). Road construction will require some full bench design (BMP 14.7). Waste material should be end-hauled and disposed of on a stable site (BMP 14.12). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Full suspension over Class III Stream required in center of unit; verify feasibility or locate temp road.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.17)

FISH/WATERSHED INPUT

Four water quality streams are located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Neets Bay. Identified VQO is modification. Topographic features and adjacent standing timber will help screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

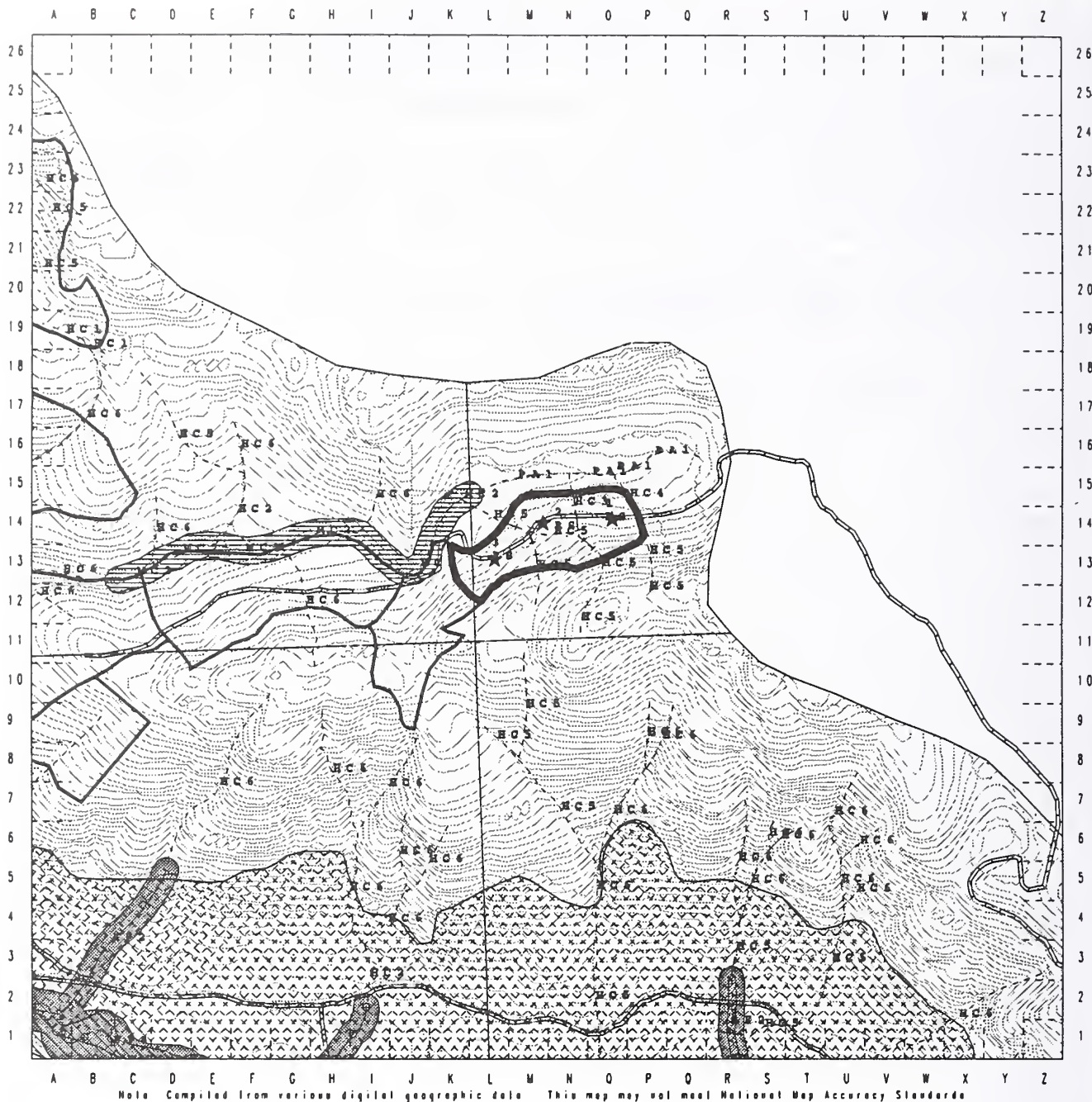
No concerns. NRB 9/21/95

SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using high elevation Sitka spruce or Alaska yellow cedar if available. (3 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 620 DEIS# 97

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/stall/ac/druticard/dct095.unl



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Settling Line
- Other UC DEIS Unit Boundary Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 18.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 18.6
Potential MBF - 642.1
Quarter Quad - K1N055E
VCU Number - 737
Photo Number - 1890-65
Alternative Pattern - 020000
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 98 Planned Acres: 31.3 Estimated Volume: 1,082.1 In Alternatives: 2, 0, 0, 0
Silvicultural System : Clearcut Settings: 2 Quad: KTND5SE Photo: 1790-64 Logging systems: RS
Mgt Area: K32 VCU: 737 Watershed: C41B WAA: 510 NOI Unit: 622 Original LSTA Unit: 737-622

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 31.1 Spruce 0.0 Mixed Hem/Spr 0.2 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 0.0 Class 5: 31.3 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 31.3 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 0.0 Medium 0.0 High 31.3 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 64%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Much of this harvest unit consists of high landslide potential. MMI=3, soils (BMP 13.5). Recommend at least partial log suspension when yarding (BMP 13.9). Road construction will require some full-bench design (BMP 14.7). Waste material should be disposed at some stable site down the road (BMP 14.12). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

At least two water quality streams are located (N-13 to N-14 and L-12 to K-14) in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width, wind-firm slope-break buffers should be maintained within V-notches (BMP 12.6a) NRB 9/21/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be visible from Neets Bay. identified VQO is modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

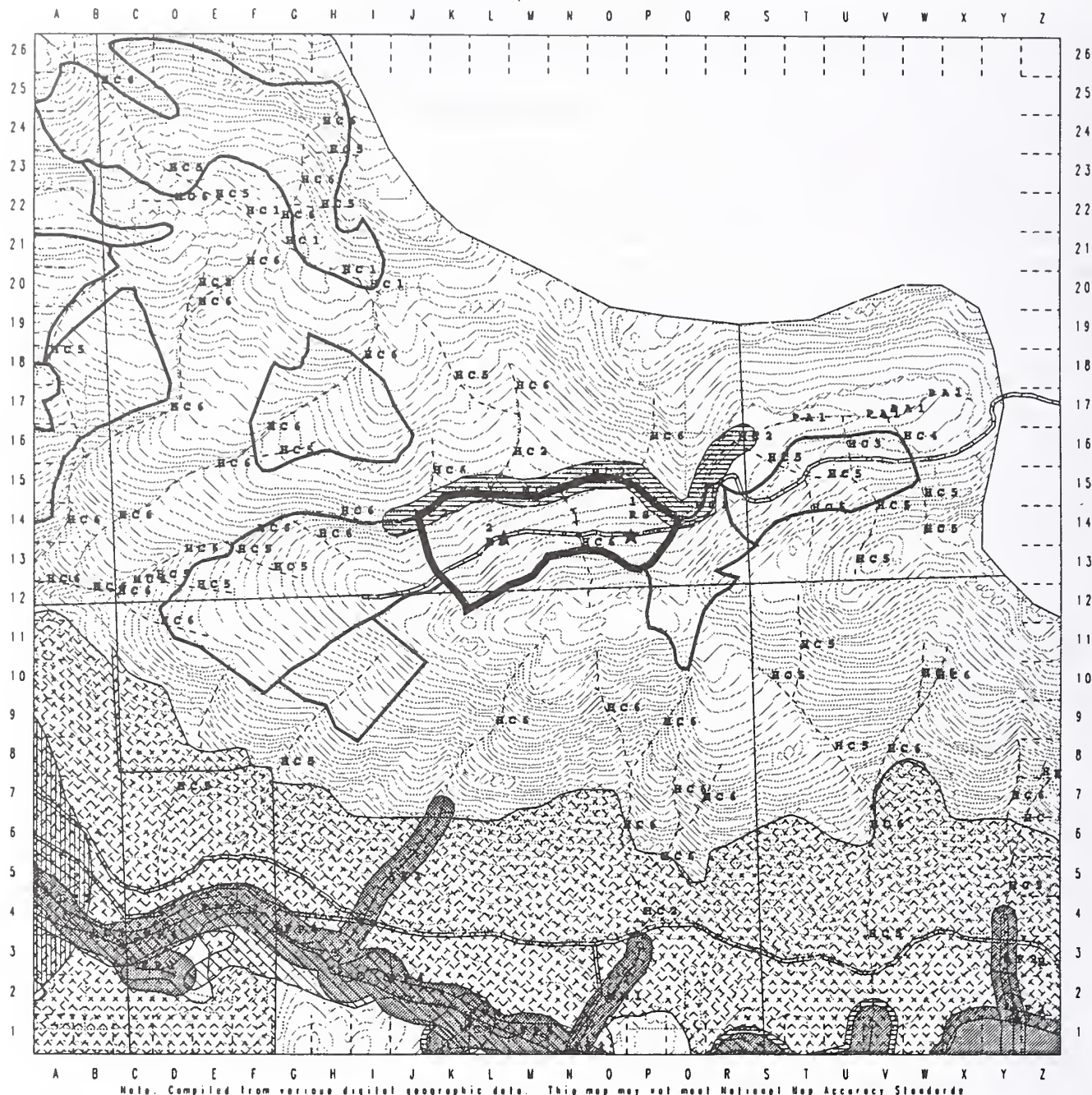
Two V-notches are located in this unit. For location and management recommendations, see FISH/WATERSHED INPUT above. NRB 9/21/95

SILVICULTURE INPUT

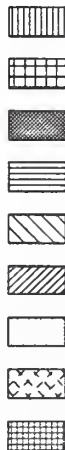
High productivity with small areas of high elevation and high mass movement soils. Planting will be required, using high elevation Sitka spruce or Alaska yellow cedar if available. (3 acres) Consideration should be given to a diameter limit cut leaving all trees 13" DBH and under standing if helicopter yarded. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 622 DEIS# 98

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/drillcard/dc1095 eml



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
other UC DEIS
Unit Boundary
Contour or Ortho
Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 31.3
Volc 6 - 0
Volc 7 - 0
Total Acres - 31.3
Potential MRF - 1082.1
Quarter Ored - KTHDSSE
VCU Number - 737
Photo Number - 1790-64
Alternative Pattern - 020000
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest

Feet
0 528 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 99 Planned Acres: 60.0 Estimated Volume: 1,552.1 In Alternatives: 2, 0, 0, 0
Silvicultural System : ShelterwoodSettings: 1 Quad: KTND5SE Photo: 1790-62 Logging systems: HE
Mgt Area: K32 VCU: 737 Watershed: BW13 WAA: 510 NOI Unit: 624 Original LSTA Unit: 737-624

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 54.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 54.3 Class 5: 0.3 Class 6: 0.0 Class 7: 0.0 Low Productive 5.4
Archeology 0-100: 0.0 100-200: 0.0 Seen 60.0 Not Seen 0.0 Primary VQO: M Recreation: SFNM
Mass movement index: Low 3.7 Medium 13.3 High 43.1 Very High 0.0 Wetland 6.1 Mix Wetland 10.2
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The higher elevations in the proposed harvest unit consist of high landslide potential soils, MMI=3. Helicopter yarding will provide full log suspension when yarding and provide adequate protection (BMP 13.9). NRB 9/21/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

No road construction planned.

FISH/WATERSHED INPUT

Five water quality streams are located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers are recommended (BMP 12.6a). NRB 9/18/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions. Harvest operations restricted to April 1 to October 1, if logs are dropped in saltwater, to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Neets Bay. Identified VQO is modification. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 9/21/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

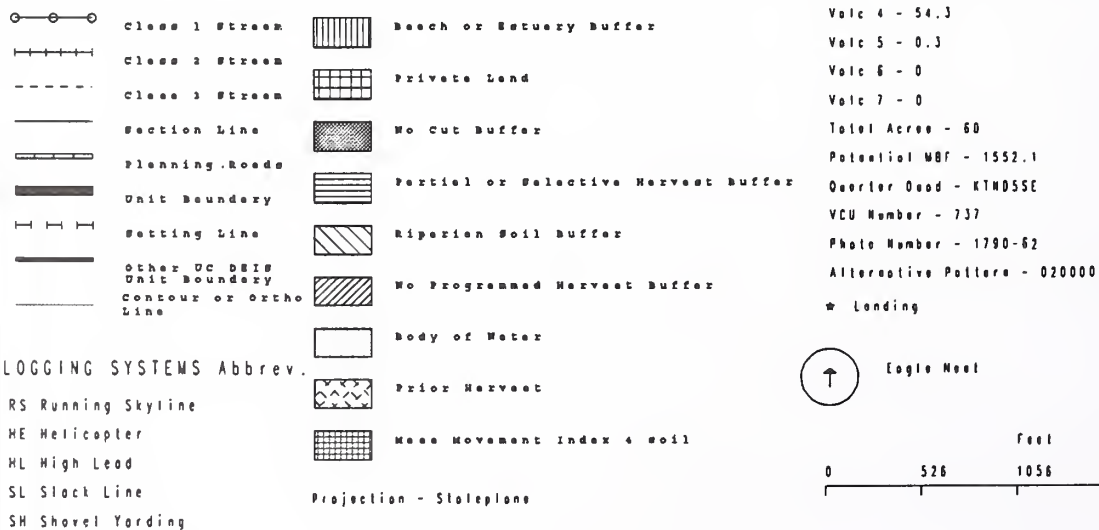
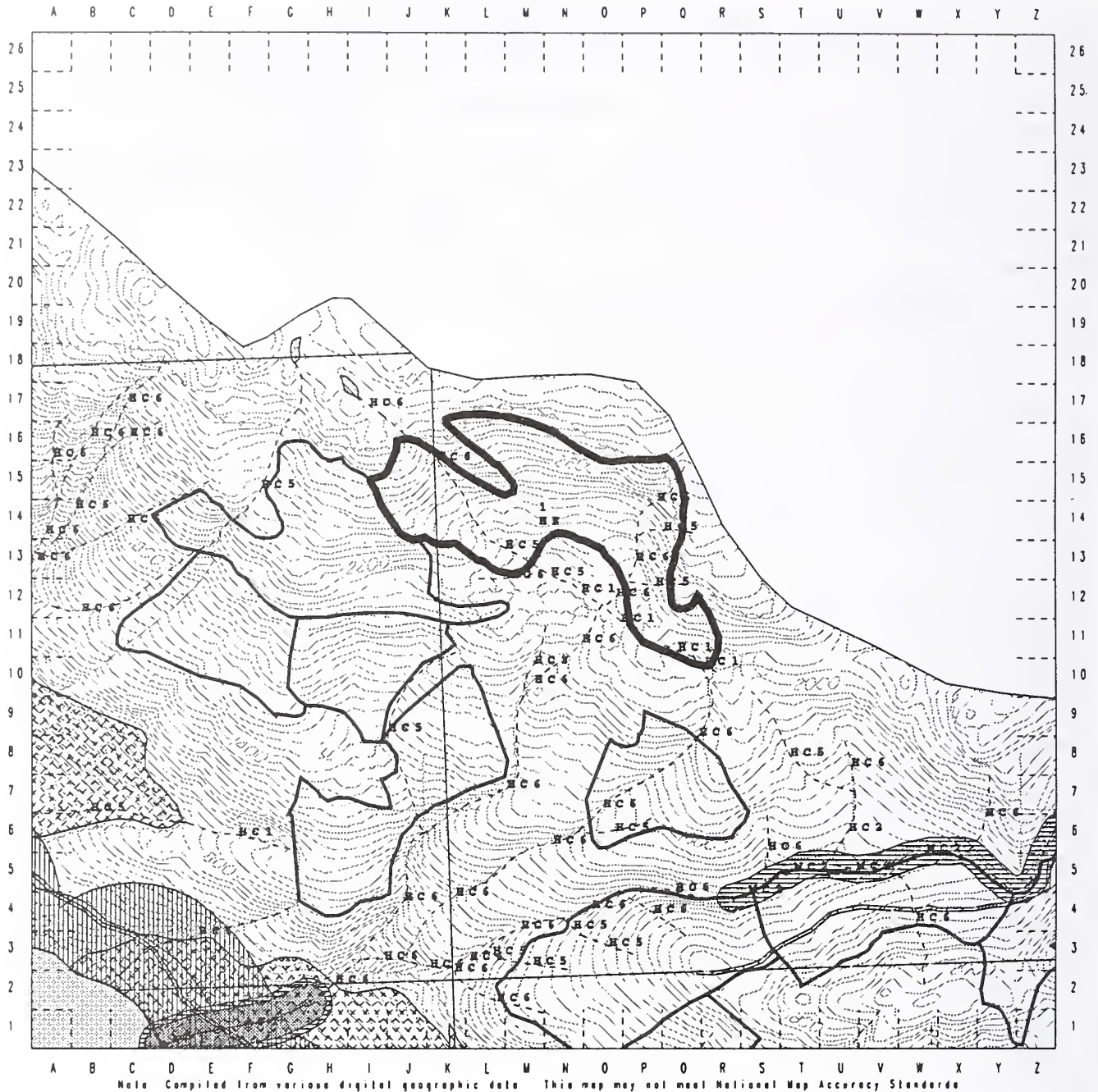
V-notch located in the northwest corner (J-16 to K-14) of this unit. Recommend wind-firm, slope-break buffer be maintained within this V-notch (BMP 12.6a). NRB 9/21/95

SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing if helicopter yarded. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 624 DEIS# 99

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/draftcard/dc1095.sml



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 100 Planned Acres: 44.5 Estimated Volume: 1,319.9 In Alternatives: 0, 0, 0, 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTND5SE Photo: 1890-63 Logging systems: HE
Mgt Area: K32 VCU: 737 Watershed: BW13 WAA: 510 NOI Unit: 625 Original LSTA Unit: 737-625

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 41.7 Spruce 0.0 Mixed Hem/Spr 1.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 24.1 Class 5: 18.6 Class 6: 0.0 Class 7: 0.0 Low Productive 1.8
Archeology 0-100: 0.0 100-200: 0.0 Seen 44.4 Not Seen 0.0 Primary VQO: PR Recreation: RM
Mass movement index: Low 1.1 Medium 17.0 High 26.4 Very High 0.0 Wetland 1.2 Mix Wetland 17.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 90%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Contains about 26 acres of MMI=3 soils. Helicopter yarding will fully suspend logs and protect the soil surface (BMP 13.9). Contains some forested wetland, again helicopter yarding will minimize surface disturbance and protect wetland functions (BMPs 12.5 and 13.9). NRB 8/9/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

High mass movement index soils. Roads construction must minimize landslide potential (BMP 14.7)
Oversteepened slopes may require full bench construction and endhaul of waste. (BMP 14.7)

FISH/WATERSHED INPUT

Two water quality streams are located in the west end of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31, if logs are dropped in saltwater, to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Neets Bay. Identified VQO is partial retention. Partial cut required to meet VQO.
WEA 9/30/95.

LANDS INPUT

Unit is uphill of the SSRAA facility at Neets Bay. Helicopter logging may take place over the hatchery site and net pens in the bay. SSRAA administrators should be consulted when logging operations take place. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/9/95

SILVICULTURE INPUT

High productivity and high mass movement potential soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Mopscote 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/drafts/dcl095 and



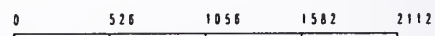
- Volc 4 - 24.1
 Volc 5 - 18.6
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 44.5
 Potential WBF - 1319.9
 Quarter Quad - K1ND55E
 VCU Number - 737
 Phone Number - 1890-63
 Alternative Pattern - 000000
 ★ Lending

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

- ### Projection - Stateplane



feet



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 101 Planned Acres: 45.8 Estimated Volume: 1,582.5 In Alternatives: 0, 0, 0, 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTND5SE Photo: 1790-35 Logging systems: HE
Mgt Area: K32 VCU: 737 Watershed: BW11 WAA: 510 NOI Unit: 628 Original LSTA Unit: 737-628

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 45.8 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 0.0 Class 5: 45.8 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 45.8 Not Seen 0.0 Primary VQO: PR Recreation: SPNM
Mass movement index: Low 0.0 Medium 0.0 High 45.8 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Helicopter yarding will provide full suspension of logs and minimize soil surface disturbance (BMP 13.9). NRB 8/9/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

This unit borders two water quality streams along the eastern and western boundaries. SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope break AHMU buffers are recommended (BMP 12.6). SPL 1/2/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31, if logs are dropped in saltwater, to avoid trumpeter swan resting feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Neets Bay. Identified VQO is partial retention. Partial cut will help mitigate visual impact. WEA 9/30/95

LANDS INPUT

Unit is located uphill from SSRAA net pens in Neets Bay. Helicopter yarding may occur over these pens. SSRAA administrators should be consulted when logging operations take place. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/9/95

SILVICULTURE INPUT

Highly productive with potential for mass movement. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. Avoid isolating timber between existing second growth and proposed unit. CBG 10/17/95

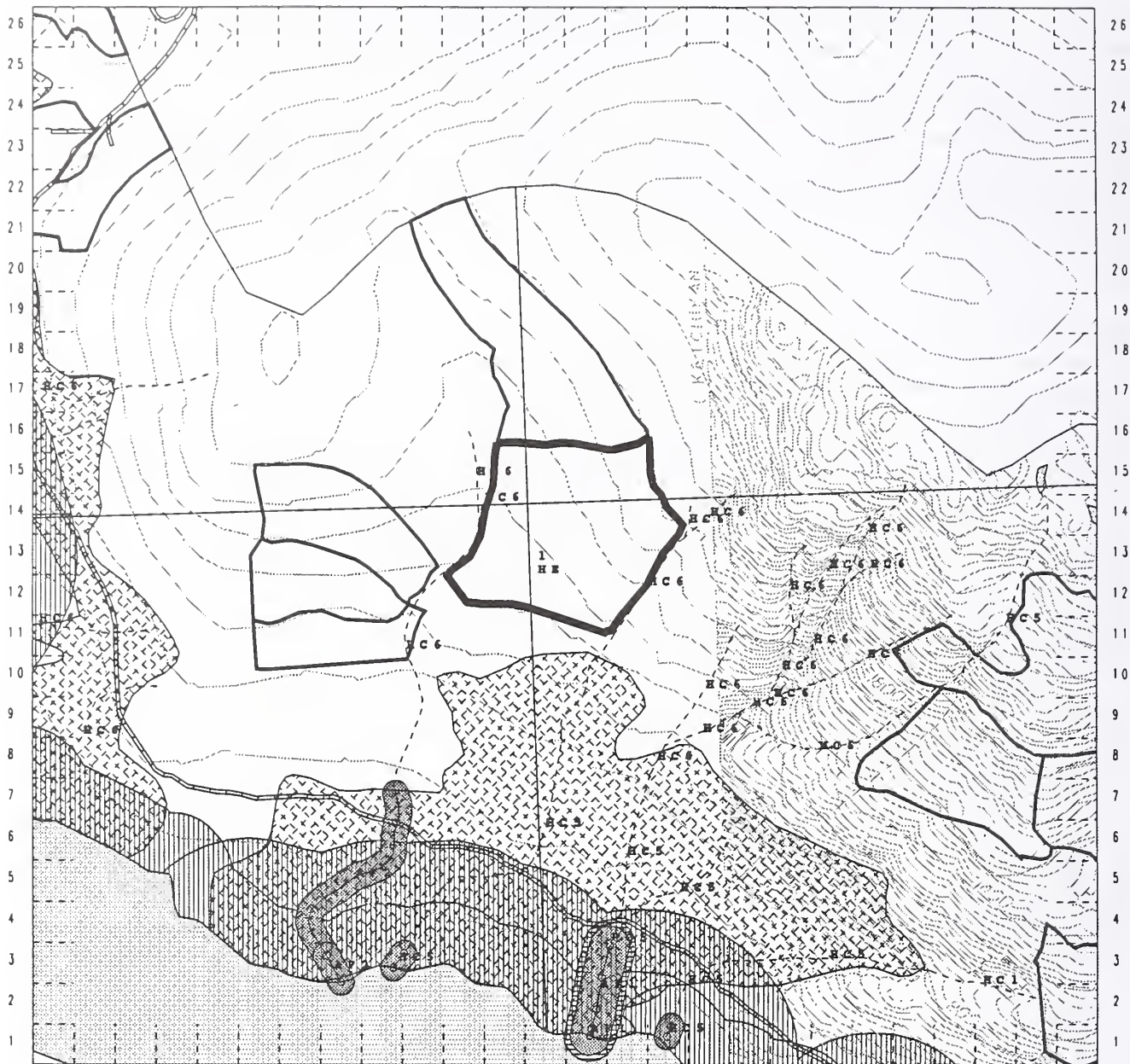
Upper Carroll Study Area Unit Schematic - Unit 628 DEIS# 101

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u03/projects/uc/draftcard/draftcard.mxd



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Road
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 0
Volc 5 - 45.8
Volc 6 - 0
Volc 7 - 0
Total Acres - 45.8
Potential MBF - 1582.5
Overlaid Quad - K1N055W
VCU Number - 737
Photo Number - 1790-35
Alternative Pollers - 000000
★ Landing

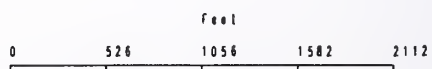
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 102 Planned Acres: 36.9 Estimated Volume: 1,009.2 In Alternatives: 0, 0, 0, 0
Silvicultural System: Shelterwood Settings: 1 Quad: KTND5SE Photo: 1790-35 Logging systems: HE
Mgt Area: K32 VCU: 737 Watershed: BW11 WAA: 510 NOI Unit: 630 Original LSTA Unit: 737-630

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 35.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 32.9 Class 5: 2.7 Class 6: 0.0 Class 7: 0.0 Low Productive 1.3
Archeology 0-100: 0.0 100-200: 0.0 Seen 36.9 Not Seen 0.0 Primary VQO: PR Recreation: RM
Mass movement index: Low 0.0 Medium 1.1 High 35.7 Very High 0.0 Wetland 0.0 Mix Wetland 29.4
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Helicopter yarding will provide full log suspension in areas of MMI=3 soils, minimizing soil surface disturbance and risk of landslides (BMP 13.9). NRB 8/9/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No fisheries concerns in this unit. SPL 1/2/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 if logs are dropped in saltwater, to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Neets Bay. Identified VQO is partial retention. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

Unit is located uphill of SSRAA net pens in Neets Bay. Helicopter logging may take place over these pens and other SSRAA facilities. SSRAA administrators should be advised when logging takes place. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

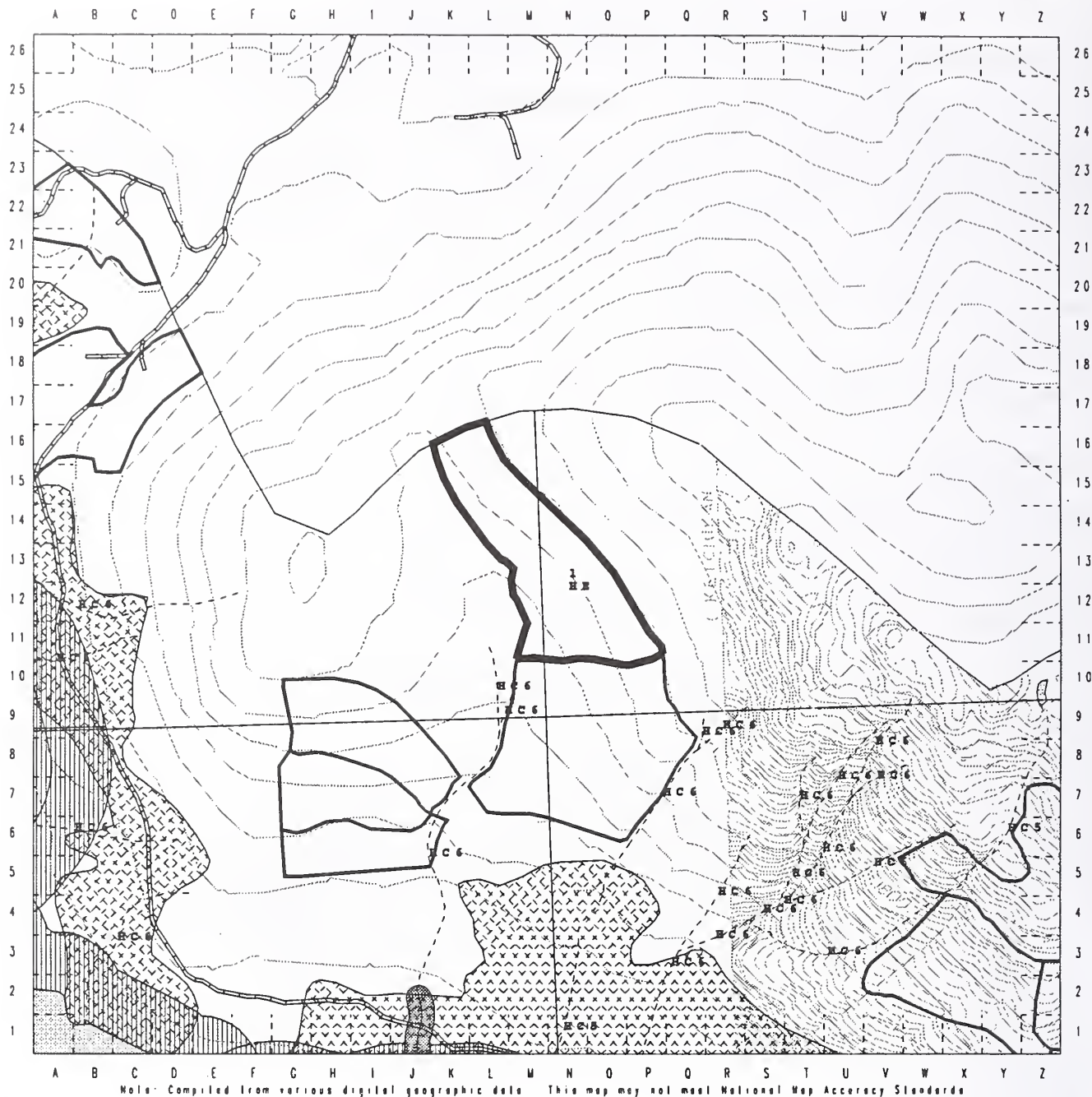
No geologic concerns in this harvest unit. NRB 8/9/95

SILVICULTURE INPUT

High productivity with steep slopes. Apply shelterwood system leaving all trees 13" DBH and under standing if helicopter yarded. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 630 DEIS# 102

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /w05/projects/uc/draftcard/draftcard.mxd



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

<ul style="list-style-type: none"> Class 1 Stream Class 2 Stream Class 3 Stream Section Line Planning Roads Unit Boundary Setting Line Other UC DEIS Unit Boundary Contour or Ortho Line 	<ul style="list-style-type: none"> Beach or Estuary Buffer Private Land No Cut Buffer Partial or Selective Harvest Buffer Riparian Soil Buffer No Programmed Harvest Buffer Body of Water Prior Harvest Mass Movement Index 4 Soil 	<p>Volc 4 - 32.9</p> <p>Volc 5 - 2.7</p> <p>Volc 6 - 0</p> <p>Volc 7 - 0</p> <p>Total Acres - 36.9</p> <p>Potential MBF - 1009.2</p> <p>Quarter Quad - KTD055W</p> <p>VCU Number - 737</p> <p>Photo Number - 1790-35</p> <p>Alternative Pattern - 000000</p> <p>* Landing</p>
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LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Stock Line

SH Shovel Yarding

Projection - Stateplane

Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 103 Planned Acres: 19.6 Estimated Volume: 565.6 In Alternatives: 0 . 0 . 0 . 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTND5SE Photo: 1790-35 Logging systems: HE
Mgt Area: K32 VCU: 737 Watershed: BW10 WAA: 510 NOI Unit: 631 Original LSTA Unit: 737-631

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 15.7 Spruce 0.0 Mixed Hem/Spr 3.8 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 15.7 Class 5: 3.8 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 19.6 Not Seen 0.0 Primary VQO: PR Recreation: RM
Mass movement index: Low 0.0 Medium 6.3 High 13.3 Very High 0.0 Wetland 1.6 Mix Wetland 7.1
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

This harvest unit contains about 13 acres of high landslide potential soils, MMI=3. Helicopter yarding of logs will minimize soil surface disturbance and the risk of landslides (BMP 13.9). Full suspension yarding will also protect wetland functions by minimizing disturbance (BMP 12.5). NRB 8/9/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

One water quality stream is located along the eastern boundary of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Although this is not a TTRA stream, a slope break AHMU buffer is recommended (BMPs 12.6, 12.6a). SPL 1/2/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit is visible from Neets Bay. Identified VQO is partial retention. Shelterwood harvest will help to mollify visual impact. WEA 9/30/95

LANDS INPUT

This harvest unit is located uphill of the SSRAA fish hatchery and rearing facilities at Neets Bay. Helicopter yarding would take place over the facility. SSRAA administrators should be advised when logging operations take place. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

There are no geologic concerns in this harvest unit. NRB 8/9/95

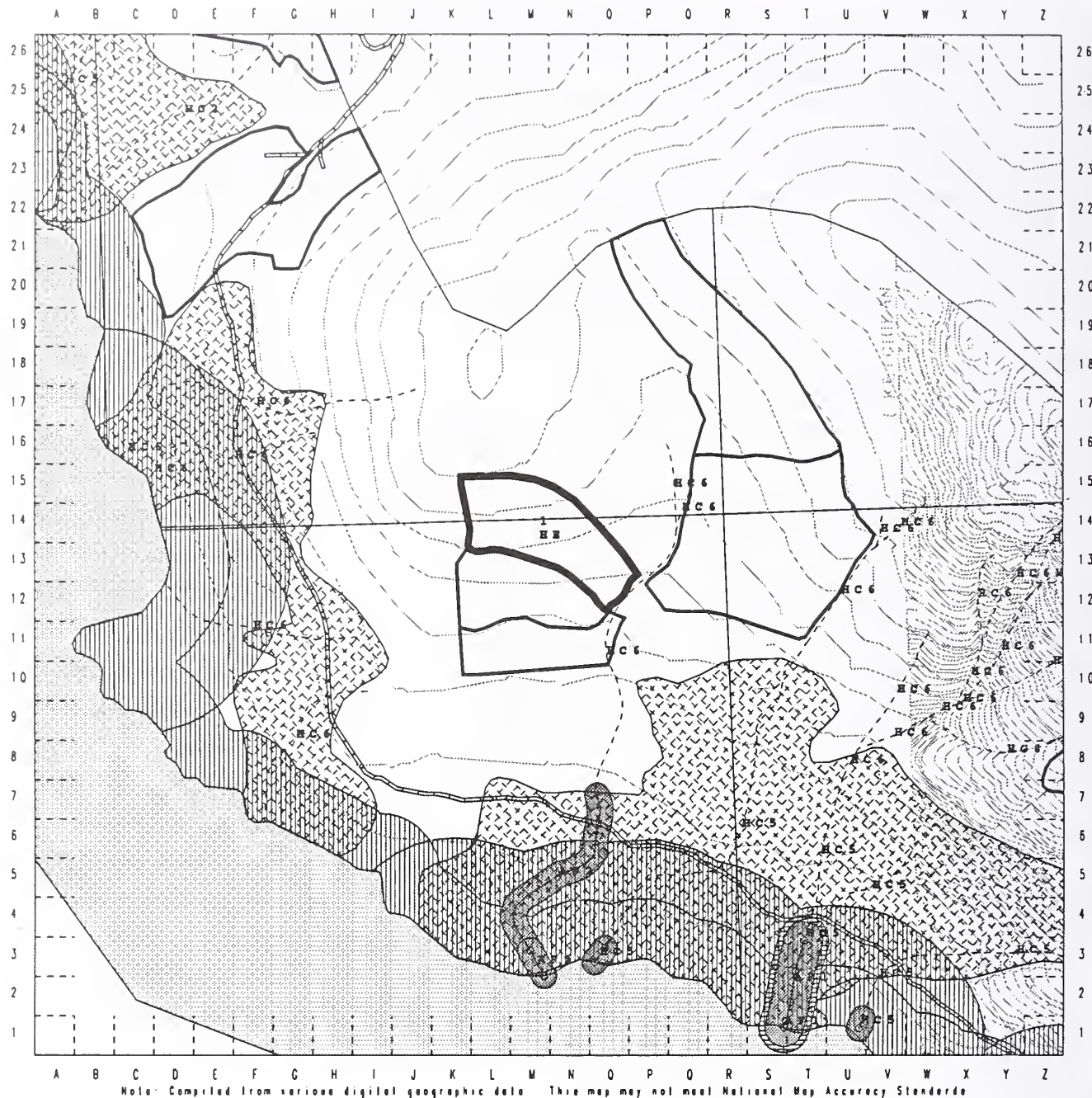
SILVICULTURE INPUT

High productivity with steep slopes. Apply shelterwood harvest system leaving all trees 13" DBH and under standing if helicopter yarded. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 631 DEIS# 103

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /w05/projects/vc/draftcord/draftcord.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Setting Line
- Other UC DEIS Unit Boundary
- Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index & Soil

Volc 4 - 15.7
 Volc 5 - 3.8
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 19.6
 Potential MBF - 565.6
 Quarter Quad - K1W055W
 VCU Number - 737
 Photo Number - 1790-35
 Alternative Pattern - 000300
 ★ Landing



Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Slack Line
 SH Shovel Yarding

Projection - Stateplane

Feet
 0 528 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 104 Planned Acres: 26.0 Estimated Volume: 886.5 In Alternatives: 2, 0, 0, 0
Silvicultural System : Shelterwood Settings 1 Quad: KTND5SW Photo: 1790-35 Logging systems: HE
Mgt Area: K32 VCU: 737 Watershed: BW13 WAA: 510 NOI Unit: 638 Original LSTA Unit: 737-638

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 26.0 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 1.5 Class 5: 24.5 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 26.0 Not Seen 0.0 Primary VQO: PR Recreation: SPNM
Mass movement index: Low 0.1 Medium 0.0 High 25.9 Very High 0.0 Wetland 0.2 Mix Wetland 0.0
% of High Value Habitat: Deer- 77% Martin- 77% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Upper slopes in this unit (L-15 to O-14) are extremely steep. Recommend full suspension to minimize surface disturbance and landslide potential (BMP 13.9), helicopter yarding will provide this. V-notch along south unit boundary (K-13 to M-13). Recommend a wind-firm buffer be placed along the north side of this V-notch (BMPs 12.6a, 13.5 and 13.16) NRB 8/9/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

One water quality stream is located along the western boundary of this unit (BMP 12.6a). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Although this is not a TTRA stream, a slope break AHMU buffer is recommended (BMPs 12.6, 12.6a) SPL 1/2/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Neets Bay. Identified VQO is partial retention. Standing adjacent timber and shelterwood harvest will help to mollify visual impact. WEA 9/30/95

LANDS INPUT

Unit is uphill from SSRAA facilities at net pens at Neets Bay. Helicopter yarding may take place over these facilities. SSRAA administrators should be advised when logging takes place. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

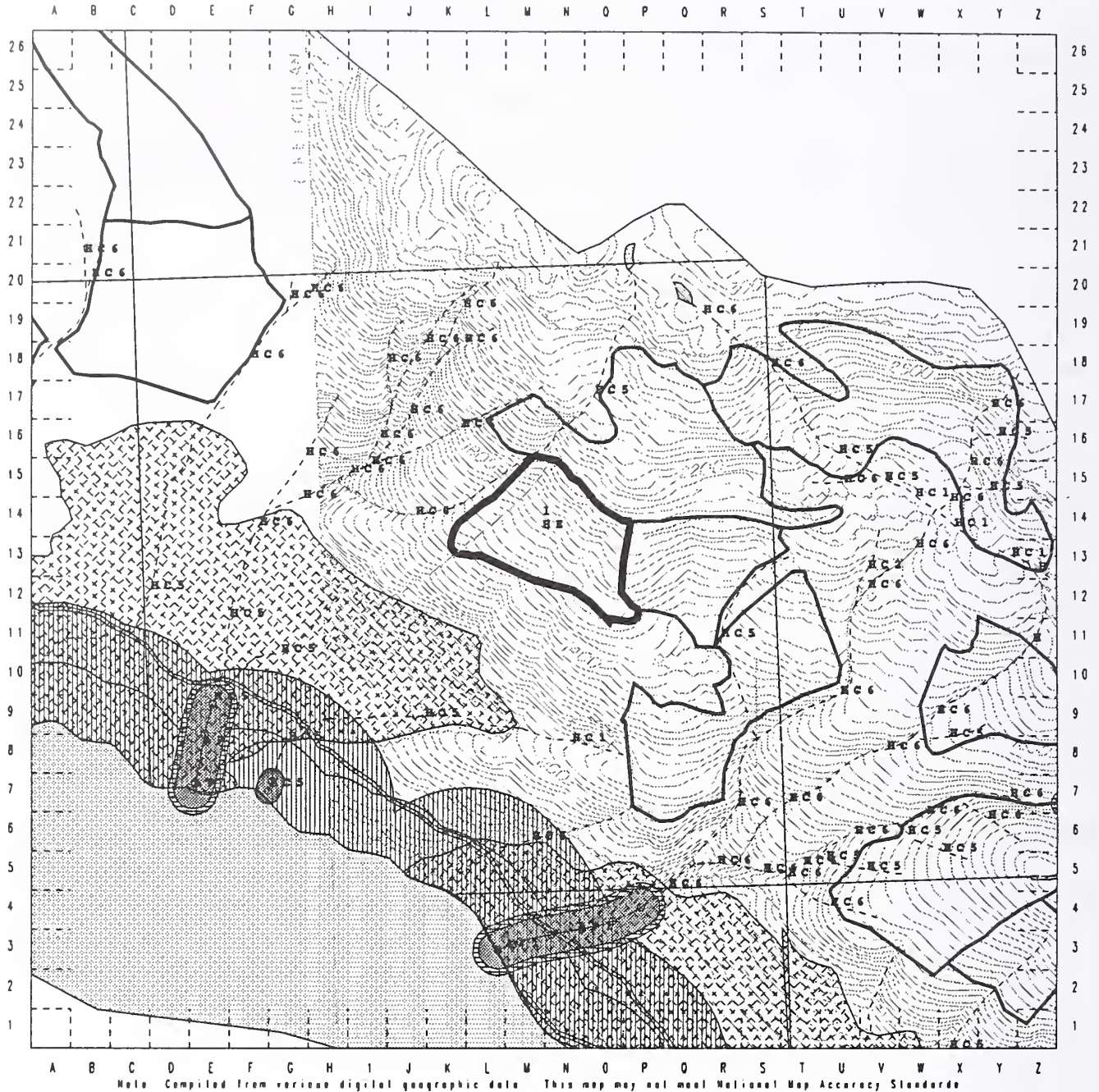
V-notch adjacent to unit. See soils input. NRB 8/9/95

SILVICULTURE INPUT

High productivity with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 638 DEIS# 104

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stall/uc/drillcard/uc1095 aml



Class 1 Stream Class 2 Stream Class 3 Stream Section Line Planning Roads Unit Boundary Settling Line Other UC DEIS Unit Boundary Contour or Ortho Line	Beach or Estuary Buffer Private Land No Cut Buffer Partial or Selective Harvest Buffer Riparian Soil Buffer No Programmed Harvest Buffer Body of Water Prior Harvest Mass Movement Index 4 Soil	Volc 4 - 1.5 Volc 5 - 24.5 Volc 6 - 0 Volc 7 - 0 Total Acres - 26 Potential MBF - 886.5 Quarter Quad - KTHDSSC VCU Number - 737 Photo Number - 1780-35 Alternative Pattern - 020000 * Landing
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LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Slack Line
 SH Shovel Yarding

Projection - Stateplane

Eagle Nest

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 105 Planned Acres: 21.5 Estimated Volume: 736.4 In Alternatives: 0, 0, 0, 0
Silvicultural System: Shelterwood Settings: 1 Quad: KTND5SW Photo: 1890-63 Logging systems: HE
Mgt Area: K32 VCU: 737 Watershed: BW13 WAA: 510 NOI Unit: 639 Original LSTA Unit: 737-639

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 21.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 0.0 Class 5: 21.3 Class 6: 0.0 Class 7: 0.0 Low Productive 0.2
Archeology 0-100: 0.0 100-200: 0.0 Seen 21.4 Not Seen 0.0 Primary VQO: M Recreation: RM
Mass movement index: Low 0.0 Medium 0.0 High 21.5 Very High 0.0 Wetland 2.5 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 93%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of high landslide potential soils. MMI=3. Recommend at least partial log suspension during yarding to minimize soil disturbance. Helicopter yarding will provide this (BMP 13.9). Includes small area (N-15) of low volume, mixed conifer plant series, wetlands (BMP 12.5). Helicopter yarding will protect this area (BMP 13.9). NRB 8/9/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Neets Bay. Identified VQO is modification. Uncut adjacent timber and shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

Unit is located uphill from SSRAA facilities at Neets Bay. Helicopter yarding may take place over net pens in the bay and on-shore facilities. SSRAA administrators should be advised when logging takes place. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/9/95

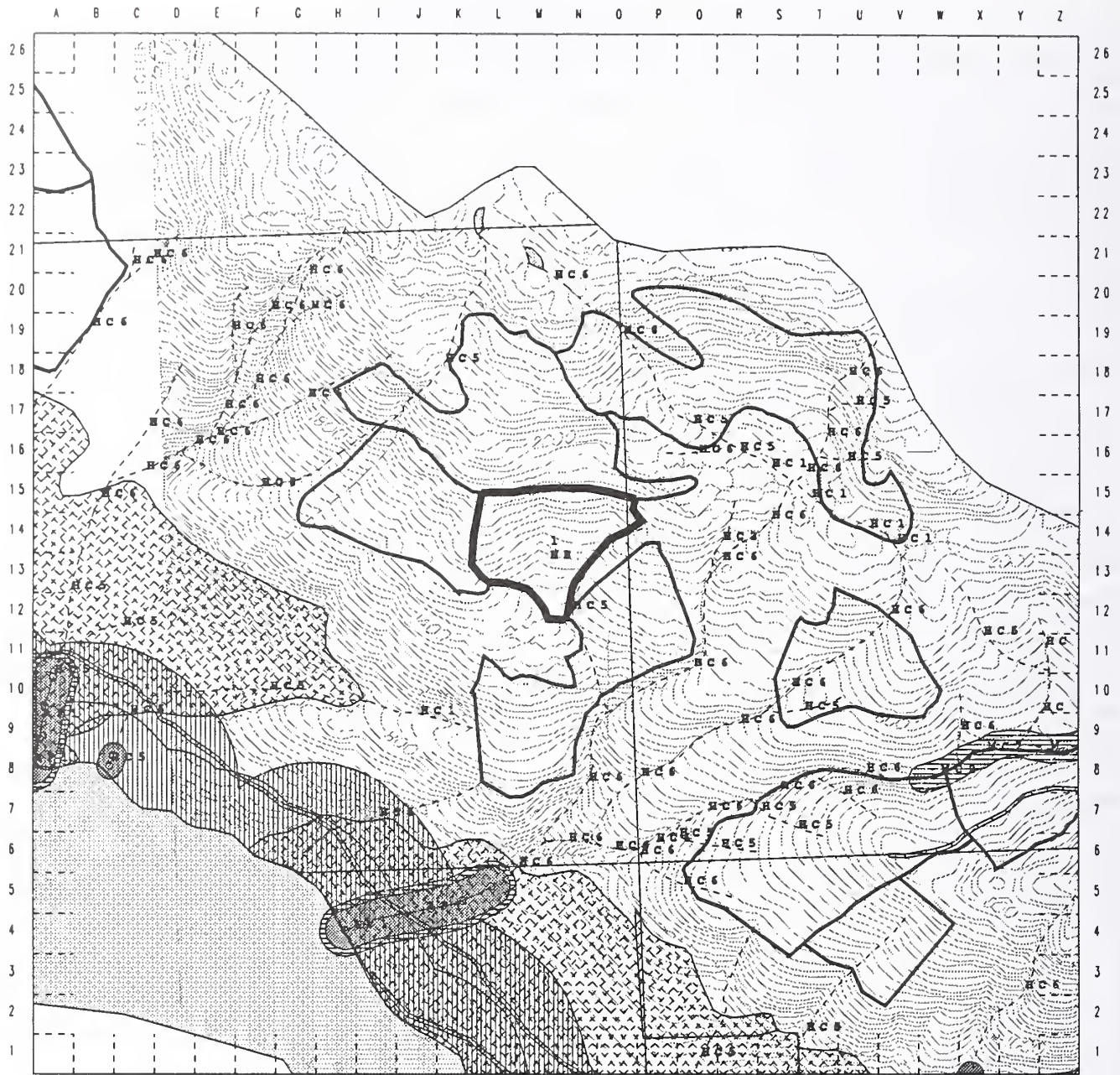
SILVICULTURE INPUT

High productivity with steep soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 639 DEIS# 105

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/stall/nc/draftcard/dcl095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Beach or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Road | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Settling Line | | Body of Water |
| | Other US DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index & Soil |
- LOGGING SYSTEMS Abbrev.
- RS Running Skyline
- HE Helicopter
- HL High Lead
- SL Slack Line
- SH Shovel Yarding
- Projection - Stateplane

Volc 4 - 0

Volc 5 - 21.3

Volc 6 - 0

Volc 7 - 0

Total Acres - 21.5

Potential MBF - 736.4

Quarter Quad - K1N055E

VCU Number - 737

Photo Number - 1890-63

Alternative Pattern - 000000

★ Landing



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 106 Planned Acres: 47.2 Estimated Volume: 1,596.7 In Alternatives: 2, 0, 0, 0
Silvicultural System: Clearcut Settings: 1 Quad: KTND5SW Photo: 1790-64 Logging systems: LS
Mgt Area: K32 VCU: 737 Watershed: C43A WAA: 510 NOI Unit: 643 Original LSTA Unit: 737-643

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 47.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 4.6 Class 5: 42.6 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 47.2 Not Seen 0.0 Primary VQO: M Recreation: RM
Mass movement index: Low 0.0 Medium 0.0 High 47.2 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 42% Martin- 42% Otter- 0% Eagle- 0% Black Bear- 85%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Consists of high landslide potential soils, MMI=3. Recommend at least partial log suspension in yarding (BMP 13.9). Unit contains shallow soils, high occurrence of blowdown. Do not recommend this unit for any type of partial cut due to blowdown potential. NRB 8/9/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline, Live Skyline and Slackline. Confirm final road and landing locations. Northern portion of planned unit appears to be a blindlead. Recommend moving road down to slope break in Northernmost part of unit and continuing road around midslope and ending at M13. Southern portion of unit also appears to have a blindlead. Run profiles to establish South, Southwest unit boundaries.

ENGINEERING INPUT

High mass movement index soils. Road construction must minimize landslide potential (BMP 14.7)
Oversteepened slopes may require full bench construction and endhaul of waste (BMP 14.7)

FISH/WATERSHED INPUT

Five water quality streams are located in this unit (BMP 12.6a). Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). An AHMU slope break buffer is recommended for this stream (BMPs 12.6, 12.6a). SPL 1/2/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Neets Bay. Identified VQO is modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/9/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

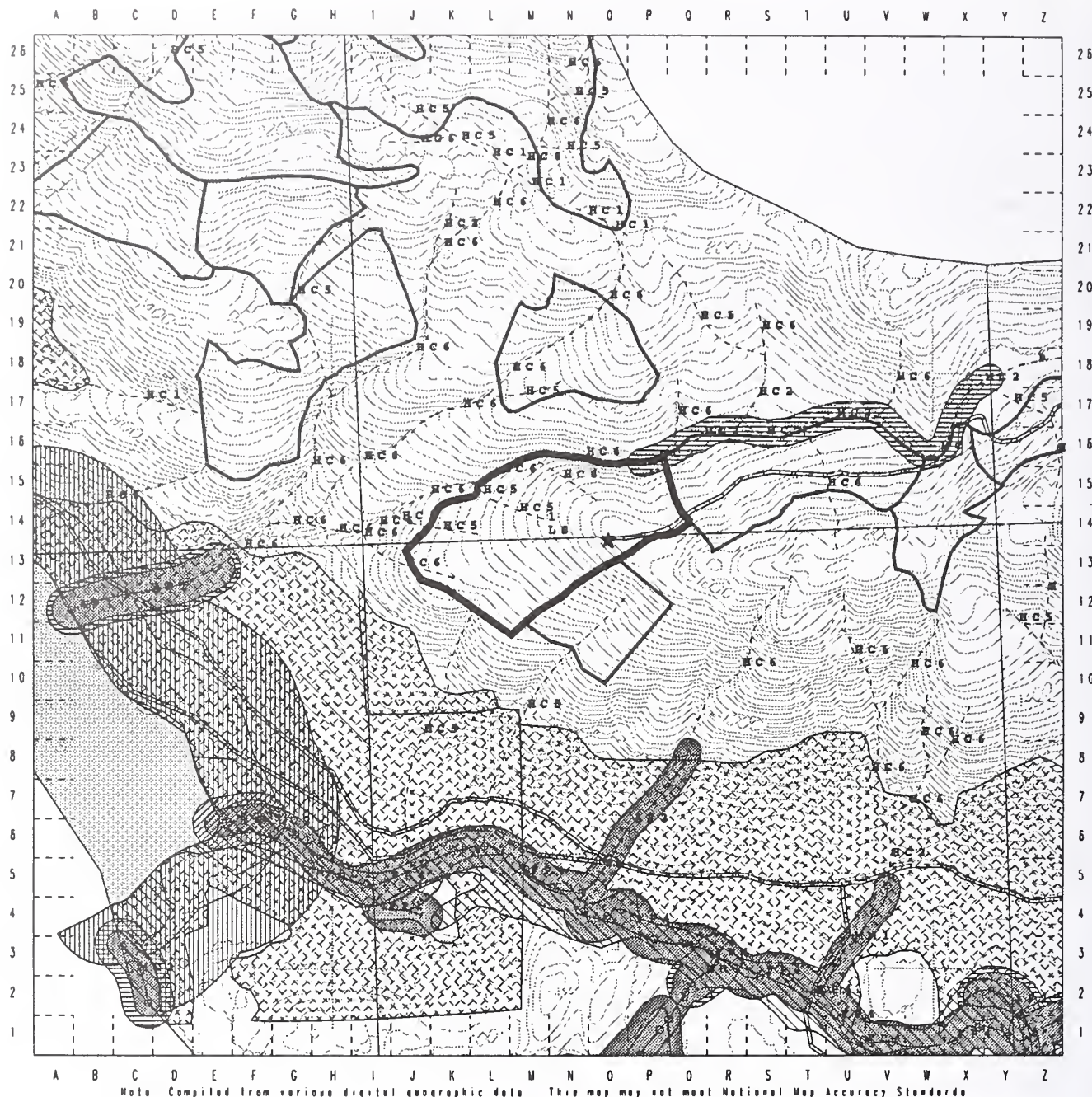
Deep V-notch along north side of unit (I-14 to P-16). Recommend windfirm buffer to protect V-notch (BMPs 12.6a, 13.5 and 13.16). NRB 8/9/95

SILVICULTURE INPUT

Highly productive with small areas of high elevation and high mass movement soils. Planting will be required, using high elevation Sitka spruce or Alaska yellow cedar if available. (10 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 643 DEIS# 106

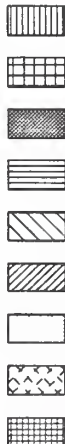
Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/drillcord/dc1095.aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary Contour or Ortho Line



Beech or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 4.6
Volc 5 - 42.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 47.2
Potential MBF - 1586.7
Quarter Quad - KTN05SE
VCU Number - 737
Photo Number - 1790-64
Alternative Pattern - 020000
★ Landing



Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stack Line
SH Shovel Yarding

Projection - Stateplane



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 107 Planned Acres: 22.7 Estimated Volume: 759.6 In Alternatives: 2, 0, 0, 0
 Silvicultural System: Shelterwood Settings 1 Quad: KTND5SE Photo: 1790-64 Logging systems: HE
 Mgt Area: K32 VCU: 737 Watershed: C43A WAA: 510 NOI Unit: 644 Original LSTA Unit: 737-644

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 22.4 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 2.3 Class 5: 20.1 Class 6: 0.0 Class 7: 0.0 Low Productive 0.3
 Archeology 0-100: 0.0 100-200: 0.0 Seen 22.7 Not Seen 0.0 Primary VQO: M Recreation: SPNM
 Mass movement index: Low 0.0 Medium 7.8 High 14.9 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 88%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Much of this unit is made up of high landslide potential soils, MMI=3. Helicopter yarding will provide full suspension over these soils (BMP 13.9)

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

Two water quality streams flow through the middle of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 if logs are dropped in saltwater, to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Units may be seen from Neets Bay. Identified VQO is modification. Adjacent uncut timber and shelterwood harvest will help screen unit. WEA 9/30/95

LANDS INPUT

Unit located uphill from SSRAA facilities at Neets Bay. Advise SSRAA administrators when logging is taking place. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

V-notch runs through middle of unit (N-15 to K-12). Recommend retention of a windfirm stand of trees within the V-notch (BMP 13.5) NRB 8/10/95

SILVICULTURE INPUT

Moderate productivity with small areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

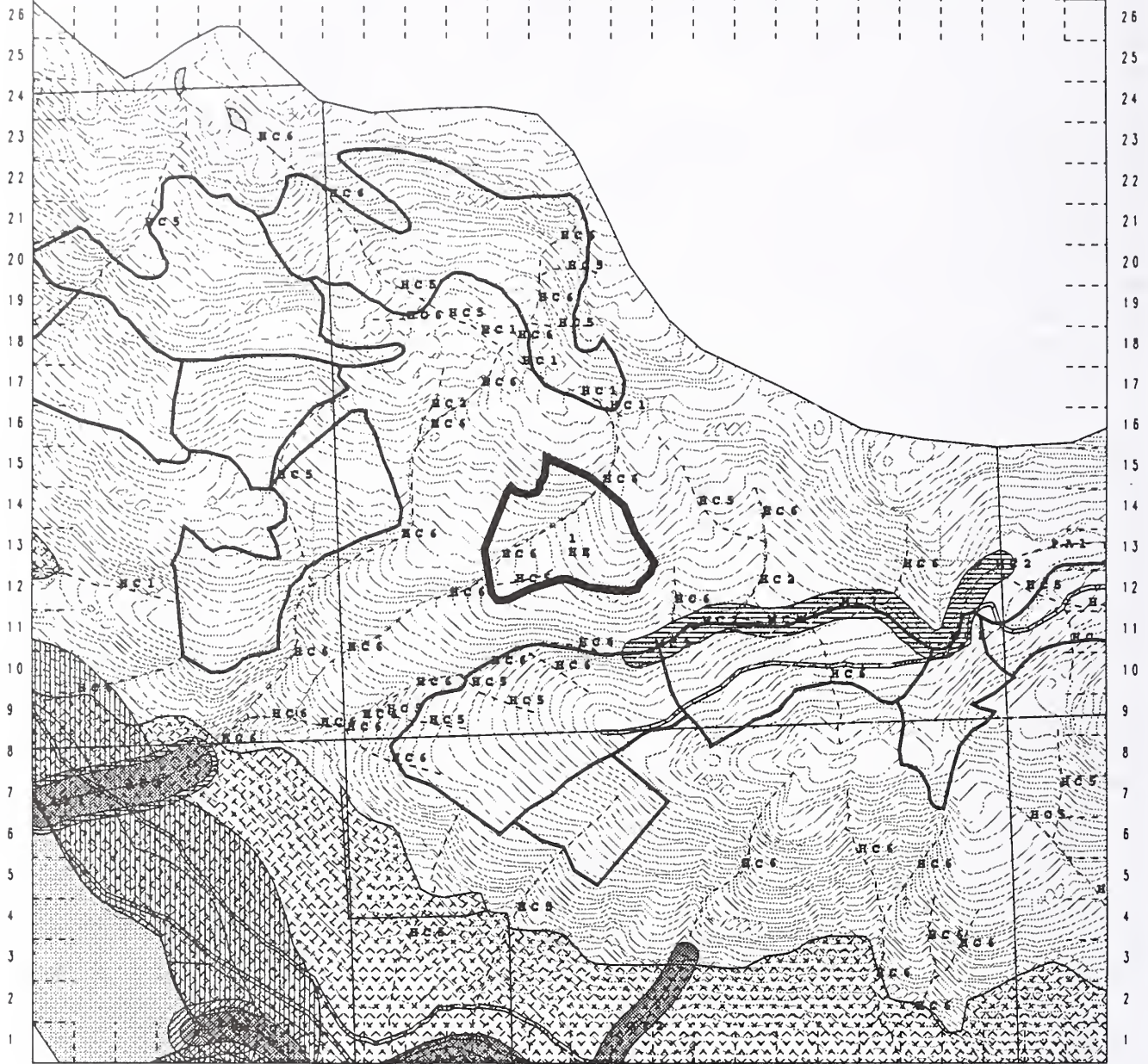
Upper Carroll Study Area Unit Schematic - Unit 644 DEIS# 107

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/stall/ac/draftcard/ec1095.dml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- | | | | |
|--|-----------------------------|--|-------------------------------------|
| | Class 1 Stream | | Marsh or Estuary Buffer |
| | Class 2 Stream | | Private Land |
| | Class 3 Stream | | No Cut Buffer |
| | Section Line | | Partial or Selective Harvest Buffer |
| | Planning Roads | | Riparian Soil Buffer |
| | Unit Boundary | | No Programmed Harvest Buffer |
| | Setting Line | | Body of Water |
| | Other UC DEIS Unit Boundary | | Prior Harvest |
| | Contour or Ortho Line | | Mass Movement Index 4 Soil |

LOGGING SYSTEMS Abbrev.

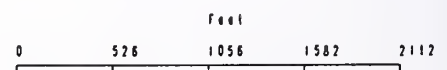
RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stoleplane

Volc 4 - 2.3
Volc 5 - 20.1
Volc 6 - 0
Volc 7 - 0
Total Acres - 22.7
Potential MBR - 759.6
Overlaid Used - ETHOSSE
VCU Number - 737
Photo Number - 1790-64
Alternative Pattern - 020000
★ Logging



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 108 Planned Acres: 6.8 Estimated Volume: 182.0 In Alternatives: 2, 0, 4, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTND5SE Photo: 1890-11 Logging systems: RS
Mgt Area: K32 VCU: 734 Watershed: D69B WAA: 406 NOI Unit: 660 Original LSTA Unit: 734-660

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 6.5 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 6.5 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.2
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 6.8 Primary VQO: MM Recreation: P1
Mass movement index: Low 6.8 Medium 0.0 High 0.0 Very High 0.0 Wetland 6.8 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of low volume, mixed conifer series on mix of well drained mineral and poorly drained organic soils.
Unit suitable for shovel logging (BMPs 12.5 and 13.9). NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. SPL 1/2/95

WILDLIFE INPUT

No concerns.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

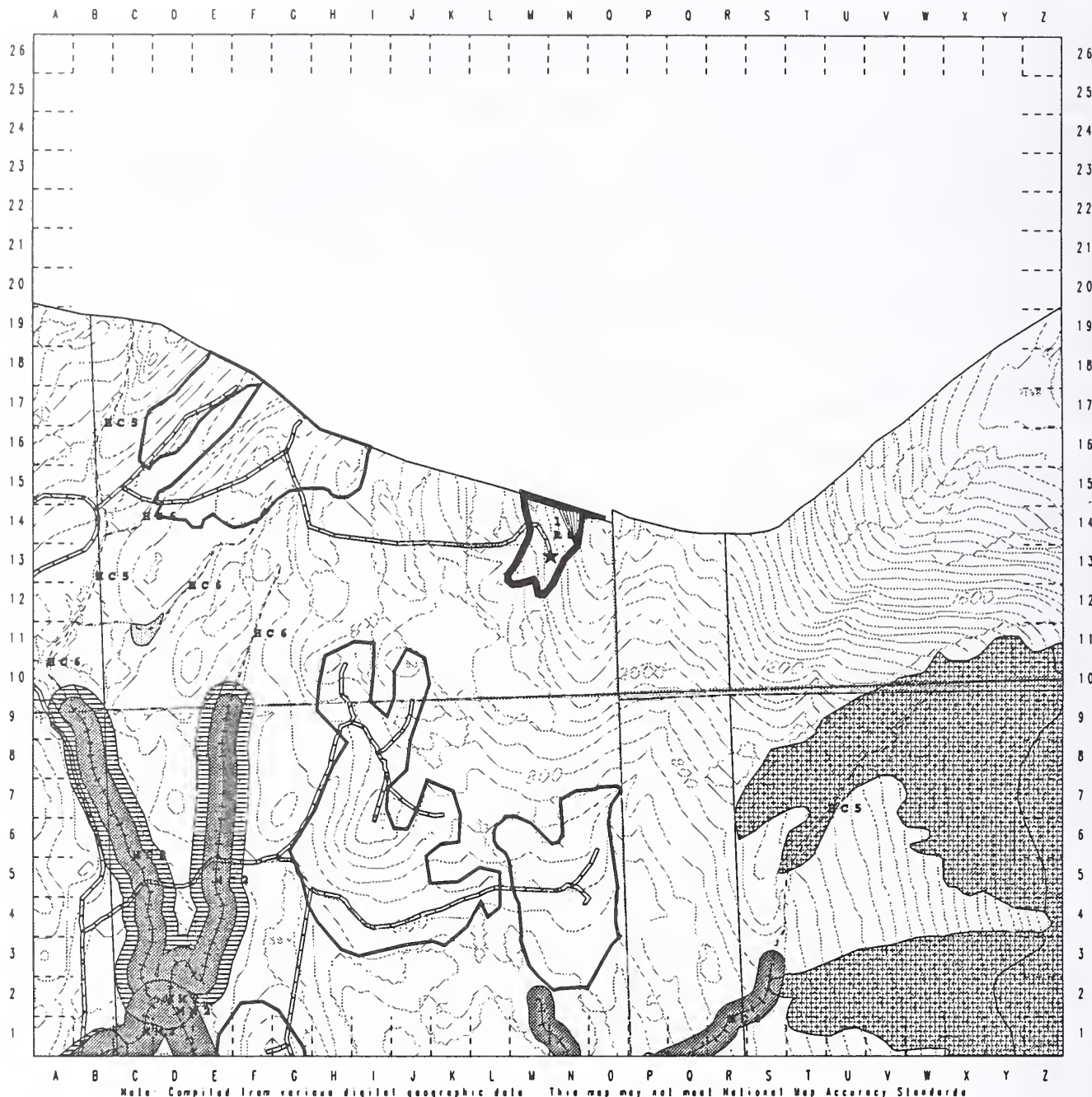
No concerns. NRB 8/10/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (1 acre) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 660 DEIS# 100

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/draft/curd/dc1095 uml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 6.5
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 6.8
Potential MBF - 182
Quarter Quad - KTN05SE
VCU Number - 734
Photo Number - 1890-11
Alternative Pattern - 020400
★ Landing



Eagle Nest



LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stack Line
SH Shovel Yarding

Projection - Stateplane

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 109 Planned Acres: 14.0 Estimated Volume: 483.5 In Alternatives: 0, 0, 0, 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTND5SE Photo: 1790-35 Logging systems: HE
Mgt Area: K32 VCU: 737 Watershed: BW10 WAA: 510 NOI Unit: 732 Original LSTA Unit: 737-732

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 14.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 0.0 Class 5: 14.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 14.0 Not Seen 0.0 Primary VQO: PR Recreation: RM
Mass movement index: Low 0.0 Medium 11.9 High 2.1 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

One water quality stream borders the eastern unit boundary (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these streams and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Although this is not a TTRA stream, a slope break AHMU buffer is recommended (BMPs 12.6, 12.6a). SPL 1/2/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Neets Bay. Identified VQO is partial retention. Adjacent uncut stands and shelterwood harvest will help screen unit. WEA 9/30/95

LANDS INPUT

Unit is located uphill from SSRAA facilities in Neets Bay. Helicopter yarding may take place over net pens and other SSRAA facilities. SSRAA administrators should be advised when logging is taking place. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/10/95

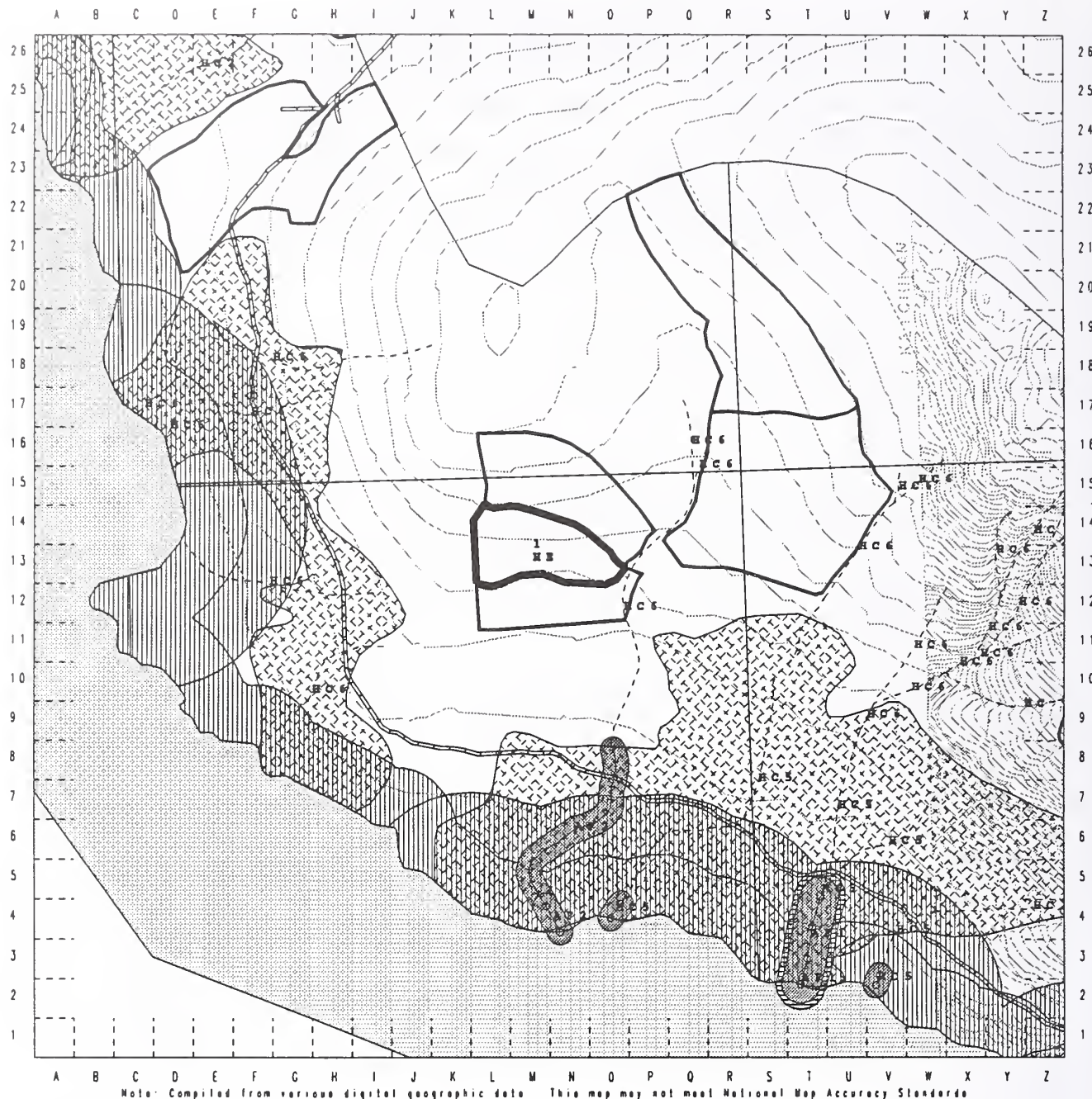
SILVICULTURE INPUT

Highly productive with areas of high mass movement potential soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 732 DEIS# 109

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s05/projects/uc/draftcard/draftcard.unl



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
other UC DEIS
Unit boundary
contour or Ortho
Line

Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water

Prior Harvest
Mass Movement Index & Soil

Volc 4 - 0
Volc 5 - 14
Volc 6 - 0
Volc 7 - 0
Total Acres - 14
Potential MBF - 483.5
Quarter Quad - KTN05SW
VCU Number - 737
Photo Number - 1790-35
Alternative Pattern - 000000
★ Landing

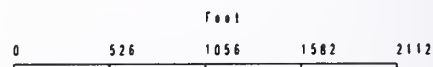


Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 110 Planned Acres: 14.0 Estimated Volume: 467.2 In Alternatives: 2, 0, 0, 0
Silvicultural System : Clearcut Settings: 3 Quad: KTND5SE Photo: 1790-37 Logging systems: RS
Mgt Area: K32 VCU: 737 Watershed: BW8A WAA: 510 NOI Unit: 753 Original LSTA Unit: 737-753

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 13.4 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
Volume class breakdown: Class 4: 0.0 Class 5: 13.4 Class 6: 0.0 Class 7: 0.0 Low Productive 0.7
Archeology 0-100: 0.0 100-200: 0.0 Seen 4.6 Not Seen 9.5 Primary VQO: MM Recreation: RM
Mass movement index: Low 10.6 Medium 3.5 High 0.0 Very High 0.0 Wetland 10.6 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

East side of unit (0-13) contains about 4 acres of forested wetlands. Area looks to be suitable for shovel yarding (BMPs 12.5 and 13.9). No concerns on the rest of the unit. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

One water quality stream is located in this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on these stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 9/18/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to protect trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

A small portion of unit may be seen from Neets Bay. Identified VQO is maximum modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

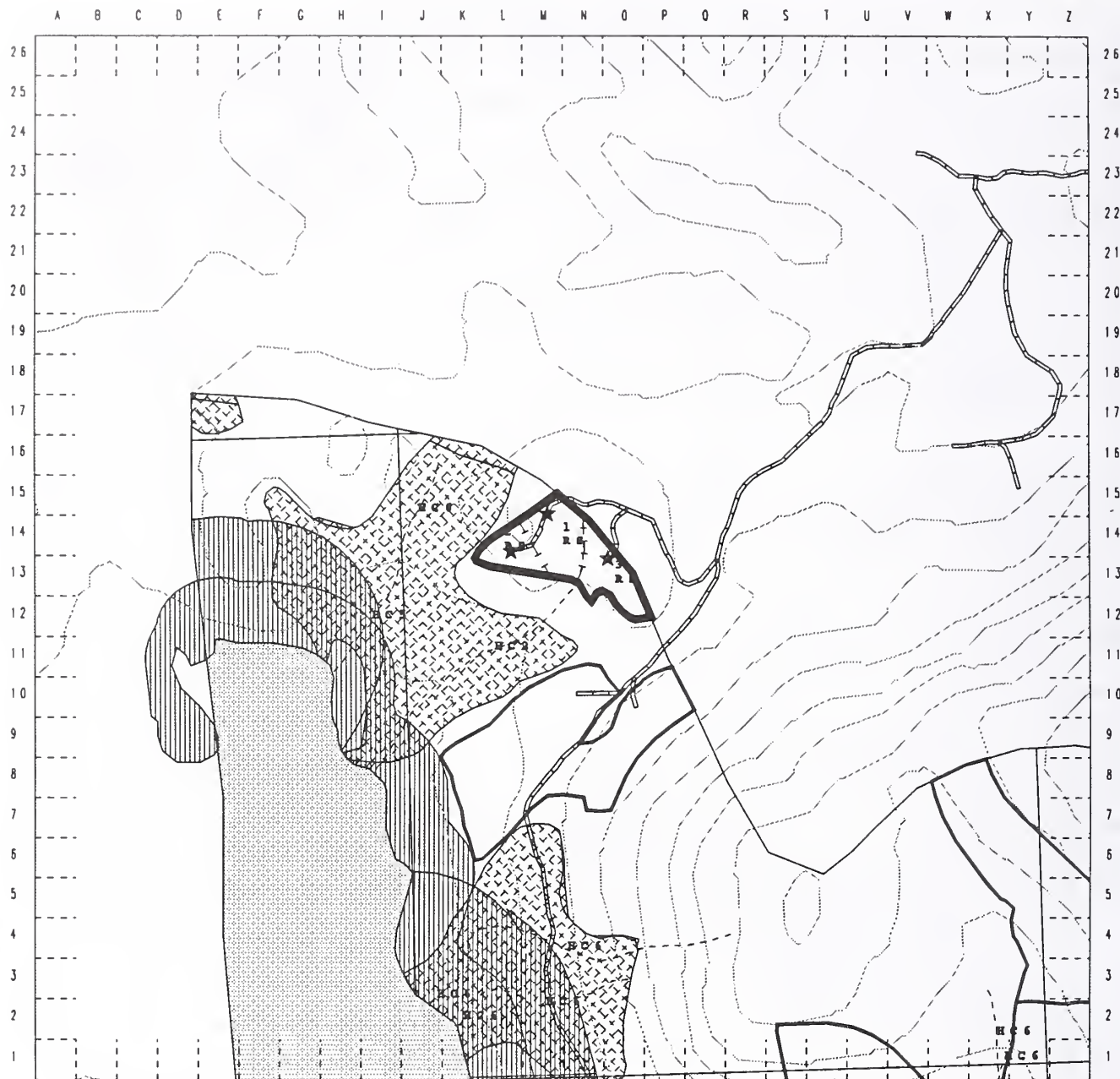
No concerns. NRB 8/10/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (4 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 753 DEIS# 110

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u05/projects/uc/draftcard/draftcard.sml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 13.4
Volc 6 - 0
Volc 7 - 0
Total Acres - 14
Potential MAF - 467.2
Overlaid Quad - KTH055W
VCU Number - 737
Photo Number - 1790-37
Alternative Pattern - 020000
★ Landing

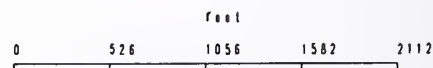
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stollplons



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 111 Planned Acres: 14.0 Estimated Volume: 345.4 In Alternatives: 2, 3, 4, 0
 Silvicultural System: Clearcut Settings: 2 Quad: KTND5SE Photo: 1390-23 Logging systems: RS
 Mgt Area: K35 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 757 Original LSTA Unit: 746-757

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 11.9 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 11.9 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 2.1
 Archeology 0-100: 0.0 100-200: 0.0 Seen 1.6 Not Seen 12.4 Primary VQO: MM Recreation: SPM
 Mass movement index: Low 14.0 Medium 0.0 High 0.0 Very High 0.0 Wetland 14.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of forested wetlands, low volume, mixed conifer stand. Suitable for shovel yarding (BMPs 12.5, 13.9).
 NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

Coho/Pink/Chum timing (June 15 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

A AHMU Class I stream flows along the north unit boundary (BMP 12.6). A minimum 100 foot TTRA buffer will be required
 along this stream (BMP 12.6a). NRB 8/24/95

WILDLIFE INPUT

No mitigation measures identified.

RECREATION / VISUALS INPUT

A small portion of unit may be seen. Identified VQO is maximum modification. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

Carbonate rock has been found in the North Saddle Lakes area. If carbonate rock or karst features are found in this
 unit, follow Ketchikan Area cave management direction. NRB 8/10/95

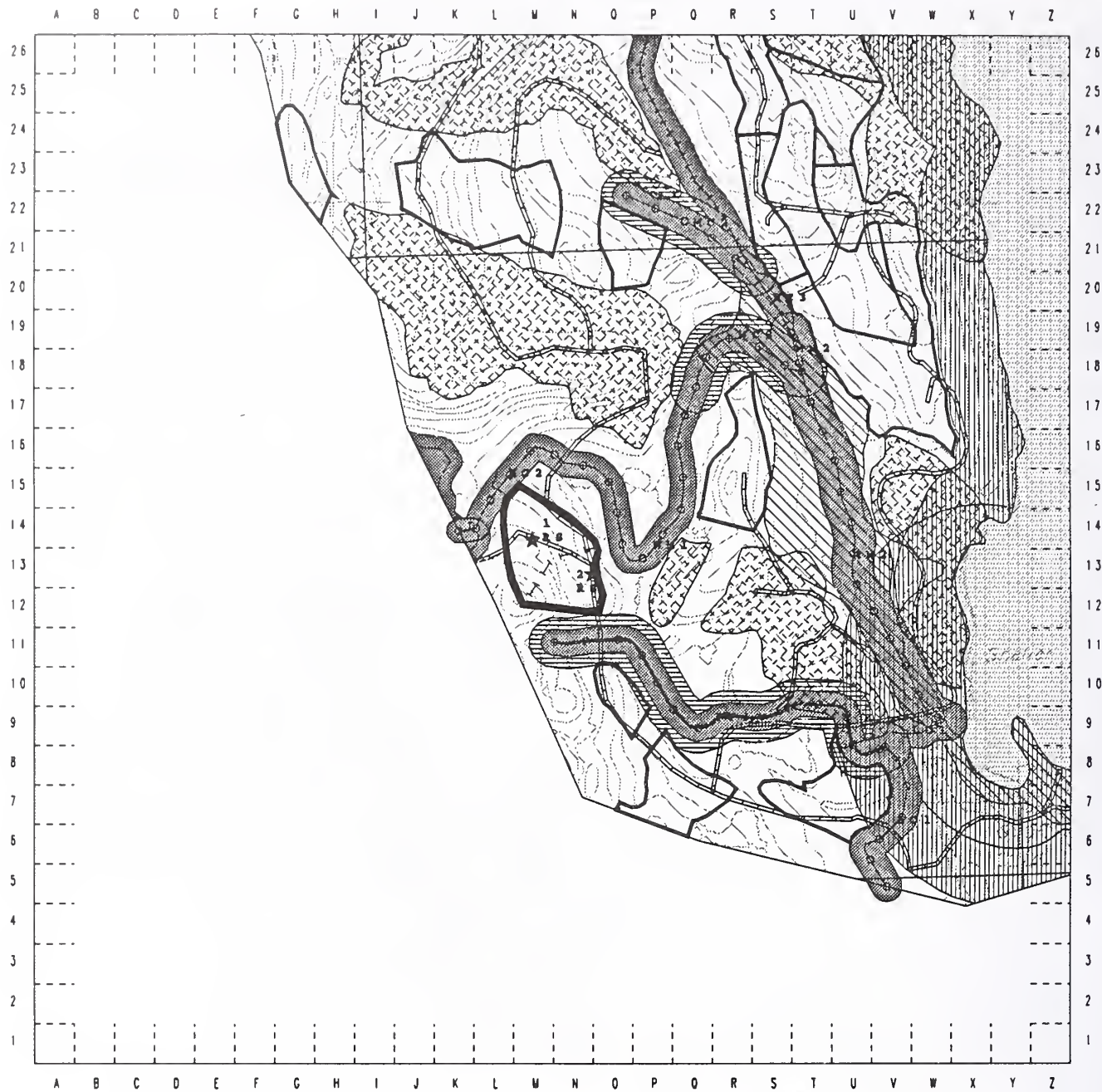
SILVICULTURE INPUT

Low productivity with areas of Hydric soils that will need to be planted. (3 acres). Consider deferring harvest.

Upper Carroll Study Area Unit Schematic - Unit 757 DEIS# 111

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/staff/nc/drollcord/4c1095.oml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Setting Line
- Other DC DEIS Unit Boundary
- Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 11.9
 Volc 5 - 0
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 14
 Potential MBF - 345.4
 Quarter Oad - KTHC55E
 VCU Number - 746
 Photo Number - 1390-23
 Alternative Pattern - 023400
 * Landing

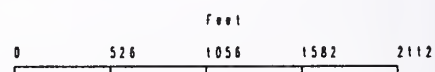
LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Stack Line
 SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 112 Planned Acres: 9.8 Estimated Volume: 296.6 In Alternatives: 2, 3, 4, 5
 Silvicultural System: Clearcut Settings: 1 Quad: KTND5SW Photo: 1390-23 Logging systems: RS
 Mgt Area: K35 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 760 Original LSTA Unit: 746-760

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 8.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 0.0 Class 5: 8.2 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 9.8 Primary VQO: MM Recreation: RM
 Mass movement index: Low 0.0 Medium 9.8 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

Coho/Pink/Chum timing (June 15 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

AHMU Class I stream flows along the north and west unit boundaries (BMP 12.6). This stream will require a minimum 100 foot TTRA buffer (BMP 12.6a). NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/24/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

There is a potential to find carbonate rock and karst features in this harvest unit. If karst features are identified during layout, follow Ketchikan Area cave management direction. NRB 8/10/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. Some areas should be planted with western red cedar to maintain species diversity. (4 acres). Possible adjacency and/or isolated strip of standing timber between proposed unit and North Saddle Lake Unit #15. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 760 DEIS# 112

Mopscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s00/stall/wc/draft/cord/4c1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Road		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 8.2
Volc 6 - 0
Volc 7 - 0
Total Acres - 9.8
Potential MBF - 296.6
Quarter Oad - KTHCSSE
VCU Number - 746
Photo Number - 1390-23
Alternative Pattern - 023450
* Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 113 Planned Acres: 7.4 Estimated Volume: 175.7 In Alternatives: 2, 3, 4, 0
Silvicultural System: Clearcut Settings: 2 Quad: KTND5SW Photo: 1390-23 Logging systems: RS
Mgt Area: K35 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 767 Original LSTA Unit: 746-767

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 1.4 Spruce 0.0 Mixed Hem/Spr 3.3 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 1.4 Class 5: 3.3 Class 6: 0.0 Class 7: 0.0 Low Productive 2.6
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 7.4 Primary VQO: MM Recreation: RM
Mass movement index: Low 7.4 Medium 0.0 High 0.0 Very High 0.0 Wetland 7.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of low volume, mixed conifer stand on poorly drained, organic soils, wetland (BMP 12.5). Suitable for shovel yarding (BMP 13.9) NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

Coho/Pink/Chum timing (June 15 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

Class I stream flows along the SW side of this unit (BMP 12.6). This stream will require a 100 foot TTRA buffer (BMP 12.6a). NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

Unit is located near Swan Lake power transmission line. Road construction, rigging and yarding needs to be designed to avoid this power line. NRB 8/24/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

There is a potential for carbonate rock and karst features to be found in this unit. If any karst features are found during reconnaissance or layout, follow Ketchikan Area cave management direction. NRB 8/10/95

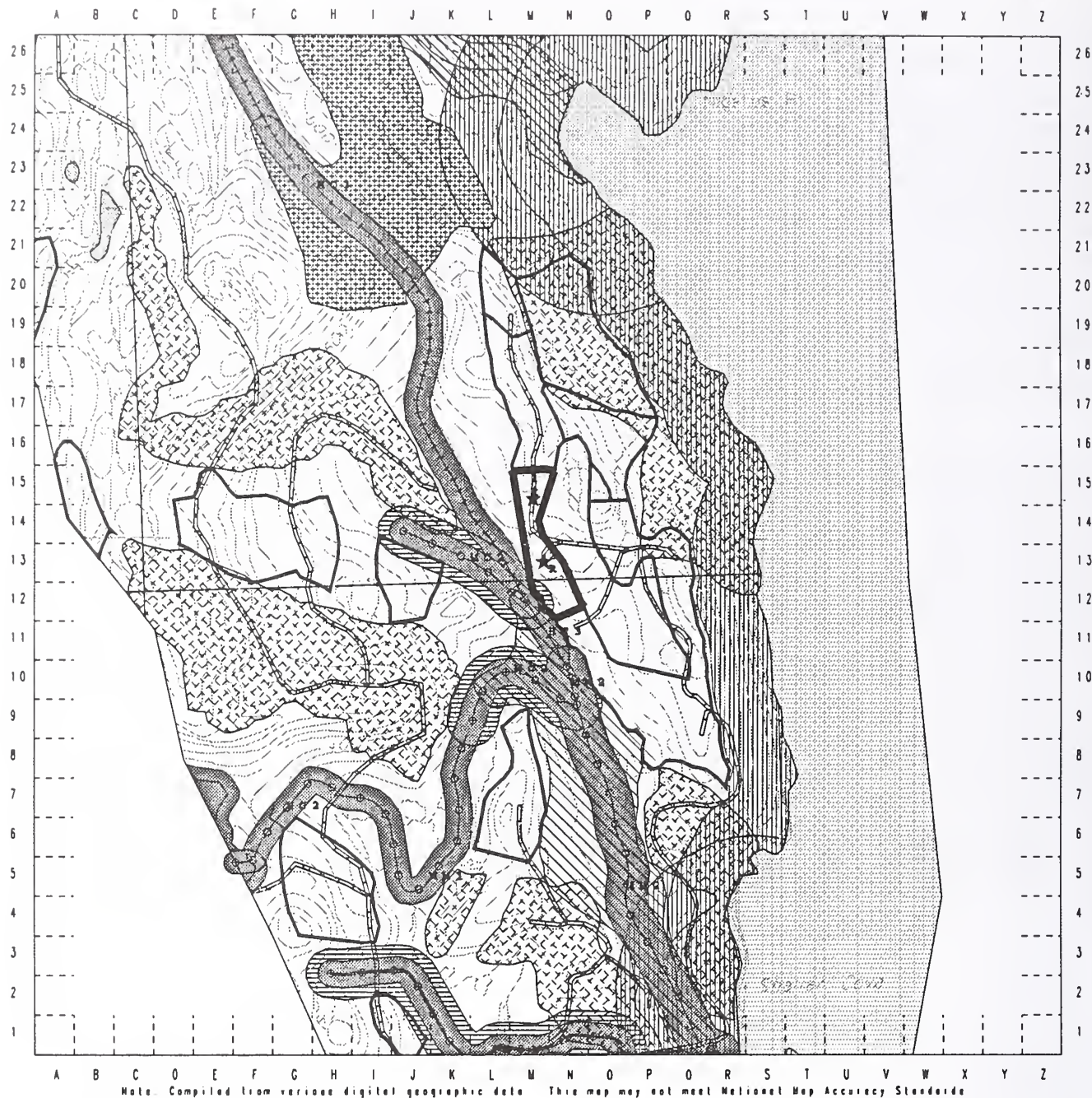
SILVICULTURE INPUT

Low productivity with large areas of Hydric soils. Consider deferring from harvest, if not plant entire unit with Sitka spruce, Alaska yellow and western red cedar mix. Prescription should address partial cut stream buffer.
CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 767 DEIS# 113

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s08/stall/uc/drillcard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Settling Line
- Other UC DEIS Unit Boundary Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 1.4
 Volc 5 - 3.3
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 7.4
 Potential MBF - 175.7
 Operator Code - KTHC55E
 VCU Number - 746
 Photo Number - 1390-23
 Alternative Pattern - 023400
 ★ Landing

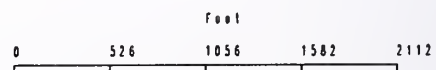
LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Slick Line
 SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 114 Planned Acres: 17.6 Estimated Volume: 155.5 In Alternatives: 0, 0, 0, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
Mgt Area: K35 VCU: 746 Watershed: 27 WAA: 406 NOI Unit: 769 Original LSTA Unit: 746-769

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 17.6 Nonforested 0.0 Aspect: NE
Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 1.8 Seen 16.6 Not Seen 1.1 Primary VQO: PR Recreation: RM
Mass movement index: Low 0.0 Medium 2.3 High 15.3 Very High 0.0 Wetland 15.3 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Field reconnaissance showed that existing second-growth stands extend into planned unit further than currently indicated. Estimated remaining acreage is 8-10 acres.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is partial retention. VQO may be difficult to achieve with clearcut harvest. WEA 9/30/95

LANDS INPUT

Unit is located along the Swan Lake power transmission line corridor. Road construction, rigging and yarding operations should be careful to avoid these overhead power lines. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

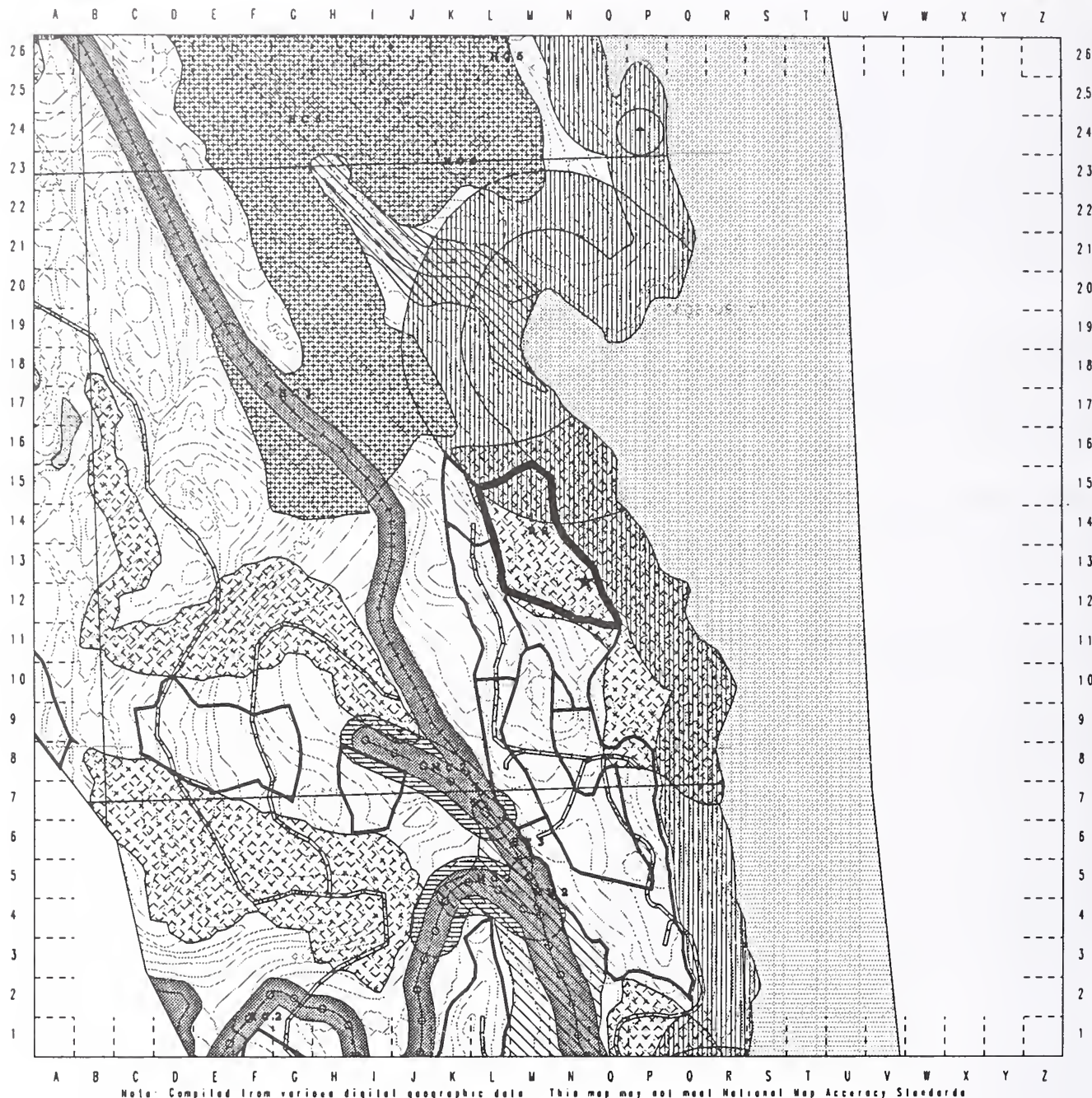
Carbonate rock and karst features are known to occur in the North Saddle Lakes area. If karst features are located in this unit during recon or layout, follow Ketchikan Area cave management direction. NRB 8/10/95

SILVICULTURE INPUT

Low productivity. Verify location of existing second growth. Proposed unit should abut existing second growth to avoid isolating small patches of standing timber. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 769 DEIS# 114

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/drallcard/dc1095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Road
- Unit Boundary
- Setting Line
- other UC DEIS Unit Boundary
- Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Well

Volc 4 - 0
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 17.6
Potential MBF - 155.5
Geologic Quad - KTHC55E
VCU Number - 746
Photo Number - 1390-28
Alternative Pattern - 000000
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stollplona



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 115 Planned Acres: 9.2 Estimated Volume: 221.8 In Alternatives: 0, 0, 0, 0
Silvicultural System: Clearcut Settings: 1 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
Mgt Area: K35 VCU: 746 Watershed: Z7 WAA: 406 NOI Unit: 770 Original LSTA Unit: 746-770

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 7.1 Spruce 0.0 Mixed Hem/Spr 2.1 Nonforested 0.0 Aspect: NE
Volume class breakdown: Class 4: 5.9 Class 5: 1.2 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 4.5 Not Seen 4.7 Primary VQO: MM Recreation: RM
Mass movement index: Low 2.2 Medium 3.6 High 3.4 Very High 0.0 Wetland 5.6 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/30/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Adjacent harvest along shoreline is well established seed/saps. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

The North Saddle Lakes area is known to contain areas of carbonate rock with karst features. If any karst features are located during recon or layout, follow Ketchikan Area cave management direction. NRB 8/10/95

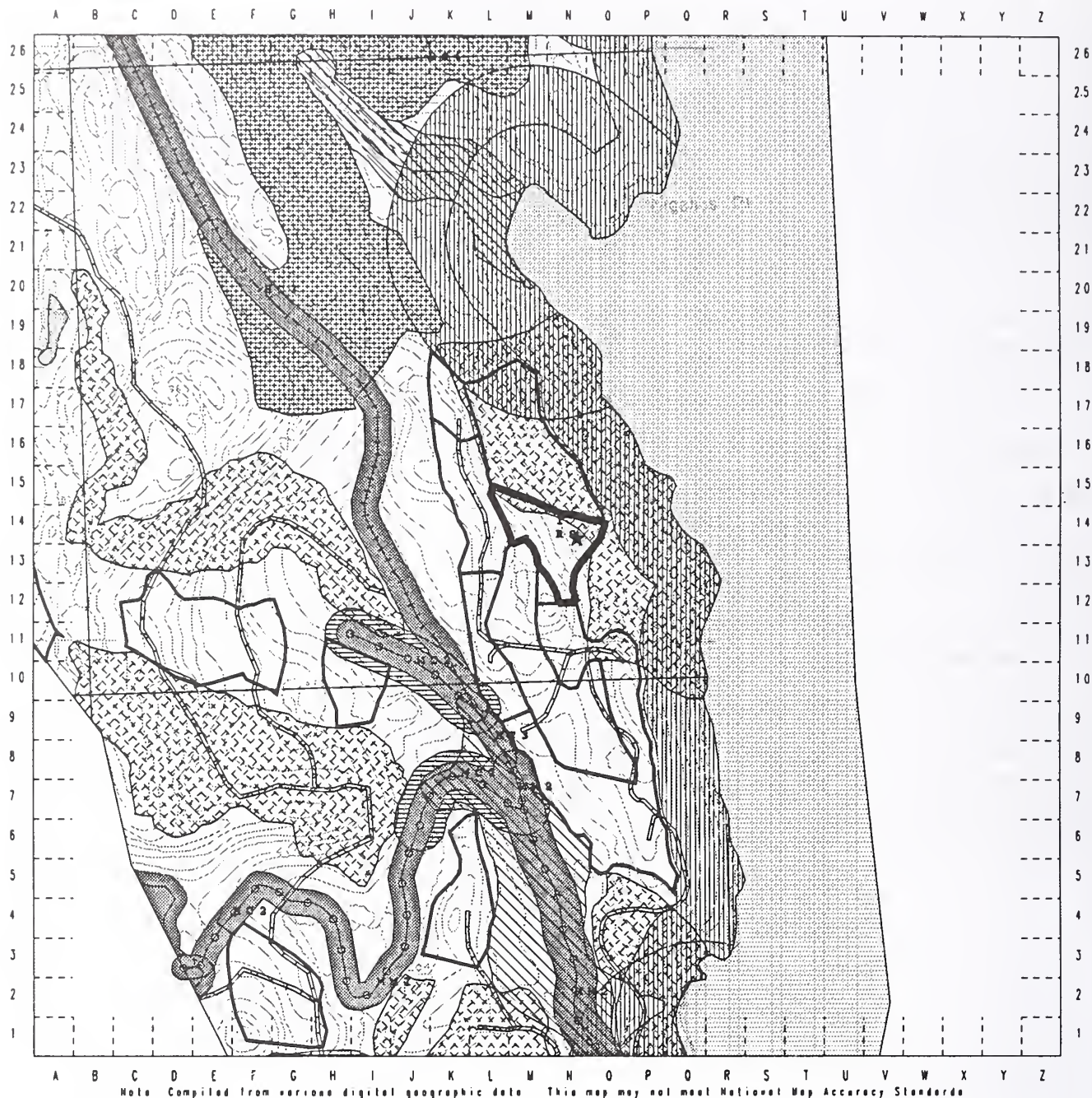
SILVICULTURE INPUT

Moderate productivity with good natural regeneration. No concerns. Verify location of adjacent second growth. Proposed unit should abut existing second growth to avoid isolating small patches of standing timber.
CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 770 DEIS# 115

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/staff/uc/draftcard/dcl095.mxd



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer	Volc 4 - 5.9
	Class 2 Stream		Private Land	Volc 5 - 1.2
	Class 3 Stream		No Cut Buffer	Volc 6 - 0
	Section Line		Partial or Selective Harvest Buffer	Volc 7 - 0
	Planning Roads		Riparian Soil Buffer	Total Acres - 9.2
	Unit Boundary		No Programmed Harvest Buffer	Potential MBF - 221.8
	Setback Line		Body of Water	Quarter Quad - K1NC5SE
	Other UC DEIS Unit Boundary Contour or Ortho Line		Prior Harvest	VCU Number - 746
			Mass Movement Index & Soil	Photo Number - 1390-23
				Alternative Pattern - 000800
				★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 116 Planned Acres: 10.2 Estimated Volume: 289.4 In Alternatives: 2, 3, 4, 5
Silvicultural System : Clearcut Settings: 2 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
Mgt Area: K35 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 771 Original LSTA Unit: 746-771

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 9.8 Spruce 0.0 Mixed Hem/Spr 0.2 Nonforested 0.0 Aspect: E
Volume class breakdown: Class 4: 7.6 Class 5: 2.2 Class 6: 0.0 Class 7: 0.0 Low Productive 0.2
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 10.2 Primary VQO: MM Recreation: RM
Mass movement index: Low 5.8 Medium 4.4 High 0.0 Very High 0.0 Wetland 5.8 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of a mixture of somewhat poorly drained and poorly drained (wetland) soils (BMP 12.5). Recommend at least partial suspension of logs during yarding to minimize surface disturbance. Shovel yarding could achieve this on parts of this unit (BMP 13.9). NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

Unit is located near the Swan Lake power transmission line. When constructing road, rigging and yarding, be careful to avoid these overhead power lines. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

The North Saddle Lakes area is known to contain some areas of carbonate rock with karst features. If karst features are located during recon or unit layout, apply Ketchikan Area cave management direction. NRB 8/10/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres)
Proposed unit should abut existing second growth to avoid isolating small patches of standing timber. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 771 DEIS# 116

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/stall/ac/draftcord/ac1095 omf



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Road
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Wettery Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 7.6
Volc 5 - 2.2
Volc 6 - 0
Volc 7 - 0
Total Acres - 10.2
Potential MBF - 289.4
Quarter Oad - KINCSCC
VCU Number - 746
Photo Number - 1390-23
Alternative Patterns - 023450
★ Landing

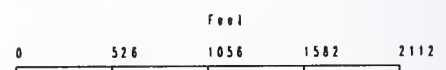
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 117 Planned Acres: 4.2 Estimated Volume: 130.1 In Alternatives: 2, 3, 4, 5
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
Mgt Area: K35 VCU: 746 Watershed: 27 WAA: 406 NOI Unit: 772 Original LSTA Unit: 746-772

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 3.6 Spruce 0.0 Mixed Hem/Spr 0.6 Nonforested 0.0 Aspect: E
Volume class breakdown: Class 4: 0.0 Class 5: 3.6 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 2.6 Not Seen 1.7 Primary VQO: PR Recreation: RM
Mass movement index: Low 0.0 Medium 4.2 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Portion of unit may be visible from Carroll Inlet. Identified VQO is partial retention. WEA 9/30/95

LANDS INPUT

Unit located near Swan Lake power transmission line. Be careful during road construction, rigging and yarding to avoid these overhead power lines. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9.30/95

GEOLOGICAL INPUT

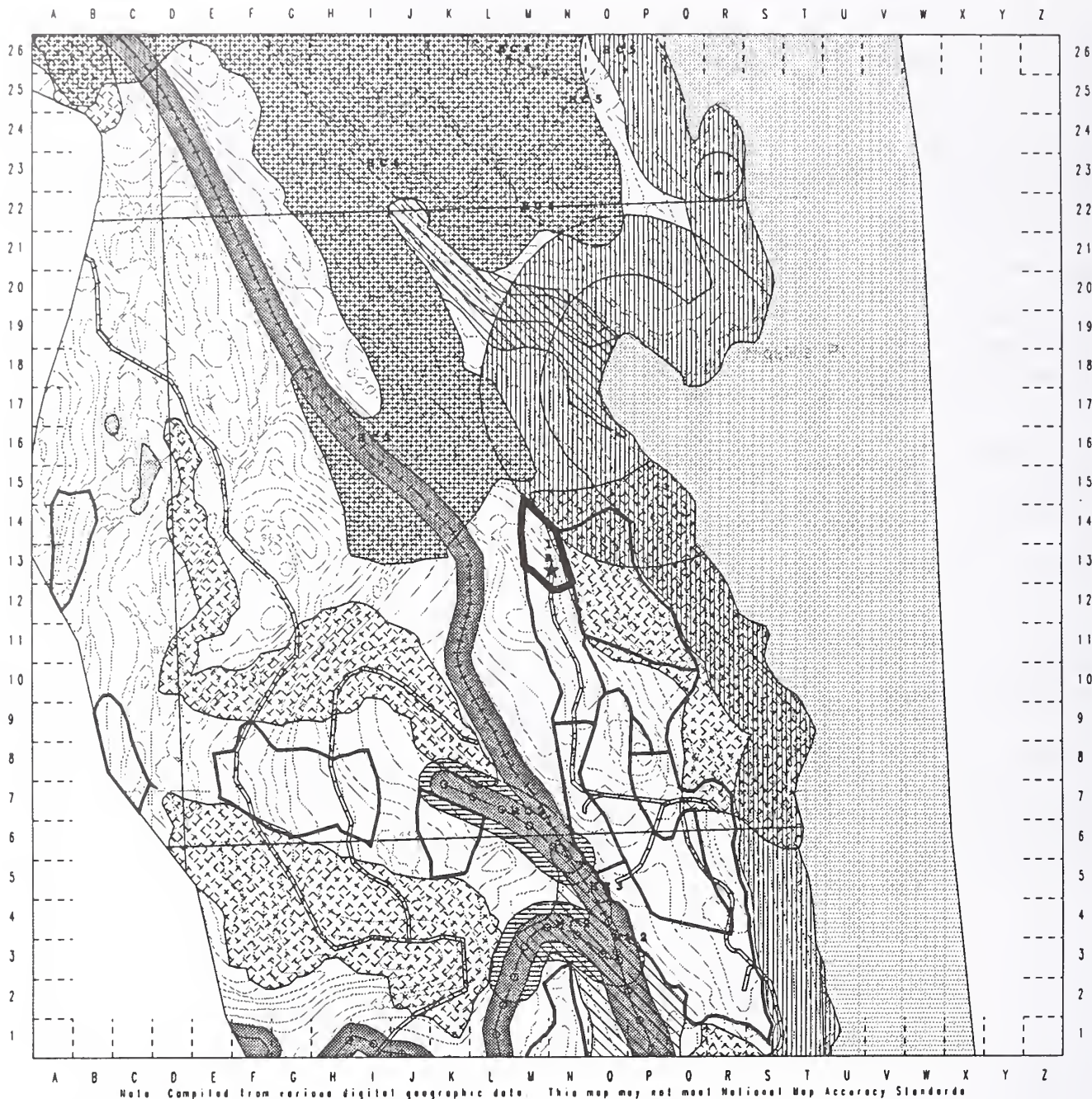
The North Saddle Lakes area is known to contain areas of carbonate rock and karst features. If karst features are identified during recon or layout, follow Ketchikan Area cave management direction. NRB 8/10/95

SILVICULTURE INPUT

Moderate productivity with good natural regeneration. Proposed unit should abut existing second growth to avoid isolating small patches of standing timber. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 772 DEIS# 117

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/uc/drollicard/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream



Class 2 Stream



Class 3 Stream



Section Line



Planning Roads



Unit Boundary



Setting Line



other UC DEIS
Unit Boundary
Contour or Ortho
Line



Beach or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index & Soil

Volc 4 - 0

Volc 5 - 3.6

Volc 6 - 0

Volc 7 - 0

Total Acres - 4.2

Potential M8F - 130.1

Quarter Quad - KTNCSSE

VCU Number - 746

Photo Number - 1390-23

Alternative Pattern - 023450

★ Landing



Eagle Nest

LOGGING SYSTEMS Abbrev.

RS Running Skyline

HC Helicopter

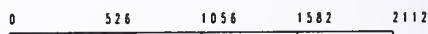
HL High Lead

SL Slack Line

SH Shovel Yarding

Projection - Spheroplane

Feet



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 119 Planned Acres: 6.4 Estimated Volume: 176.0 In Alternatives: 2, 3, 4, 0
Silvicultural System: Clearcut Settings: 1 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
Mgt Area: K32 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 776 Original LSTA Unit: 746-776

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 6.4 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: NE
Volume class breakdown: Class 4: 6.3 Class 5: 0.1 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 6.4 Primary VQO: MM Recreation: RM
Mass movement index: Low 6.4 Medium 0.0 High 0.0 Very High 0.0 Wetland 6.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit is made up of low volume western hemlock and mixed conifer plant series on poorly drained organic (wetland) soils (BMP 12.5). Recommend at least partial log suspension during yarding (BMP 13.9). Shovel logging would achieve this on much of this unit. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

Coho/Pink/Chum timing (June 15 - August 7) may apply to all road construction and/or drainage installations.

FISH/WATERSHED INPUT

A Class I stream flows along the north side of this unit (BMP 12.6). A minimum 100 foot TTRA stream buffer will be required along this stream (BMP 12.6a). NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

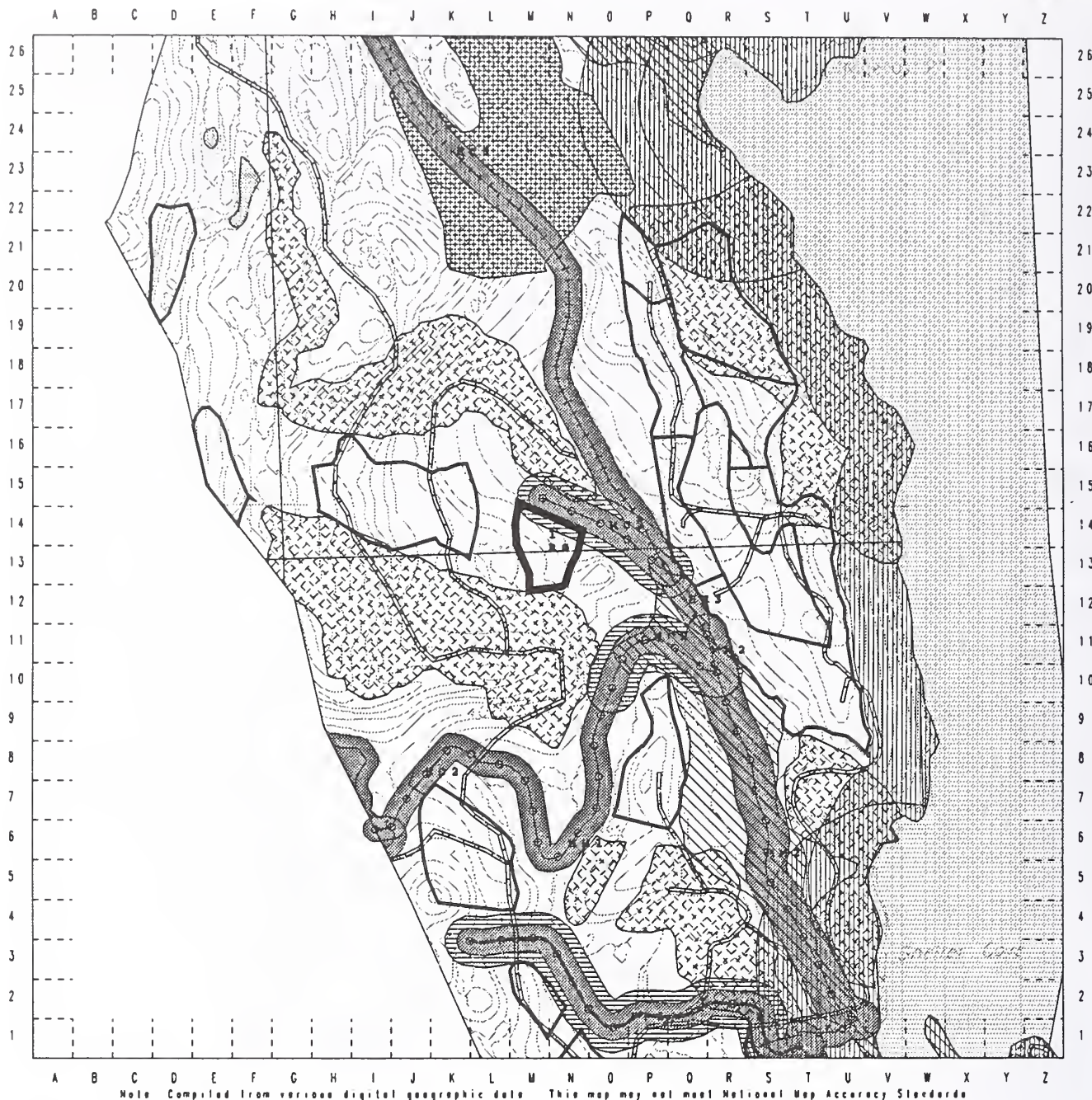
The North Saddle Lakes area is known to contain areas of carbonate rock and karst features. If karst features are identified during unit layout, follow Ketchikan Area cave management direction. NRB 8/10/95

SILVICULTURE INPUT

Moderate productivity with small areas of Hydric soils that will need to be planted. (3 acres)
Possible adjacency with NSL Unit 16, bringing total size of opening to 72 acres. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 776 DEIS# 119

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stall/wc/draftcard/dc1095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Setting Line
- Other UC DEIS Unit Boundary
- Contour or Ortho Line

- Beach or Wetuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 6.3
Volc 5 - 0.1
Volc 6 - 0
Volc 7 - 0
Total Acres - 6.4
Potential MBF - 176
Quarter Quad - KTHC55C
VCU Number - 746
Photo Number - 1390-23
Alternative Pattern - 023400
★ Landing

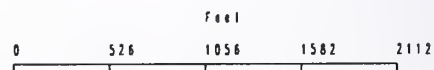
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 120 Planned Acres: 20.1 Estimated Volume: 612.2 In Alternatives: 2, 3, 4, 0
Silvicultural System: Clearcut Settings: 1 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
Mgt Area: K32 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 779 Original LSTA Unit: 746-779

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 20.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
Volume class breakdown: Class 4: 11.7 Class 5: 8.4 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 9.5 Not Seen 10.6 Primary VQO: MM Recreation: RM
Mass movement index: Low 2.4 Medium 17.7 High 0.0 Very High 0.0 Wetland 2.4 Mix Wetland 0.0
% of High Value Habitat: Deer- 99% Martin- 99% Otter- 0% Eagle- 0% Black Bear- 99%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/24/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

One water quality stream flows through the middle of this unit (BMP 12.6a). SPL 1/3/95 Recommend that yarding be split on this stream and that full log suspension be maintained when yarding across the stream (BMP 13.9), trees be felled away from the stream-course and slash be removed within 48 hours (BMP 13.16). Variable width slope-break buffers may also be required (BMP 12.6a) NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Portion of unit may be seen from North Saddle lakes. Identified VQO is maximum modification. Analyze cumulative effects with shelter cove harvest. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

The North Saddle Lakes area is known to contain some areas of carbonate rock and karst features. If karst features are identified during unit layout, follow Ketchikan Area cave management direction. NRB 8/10/95

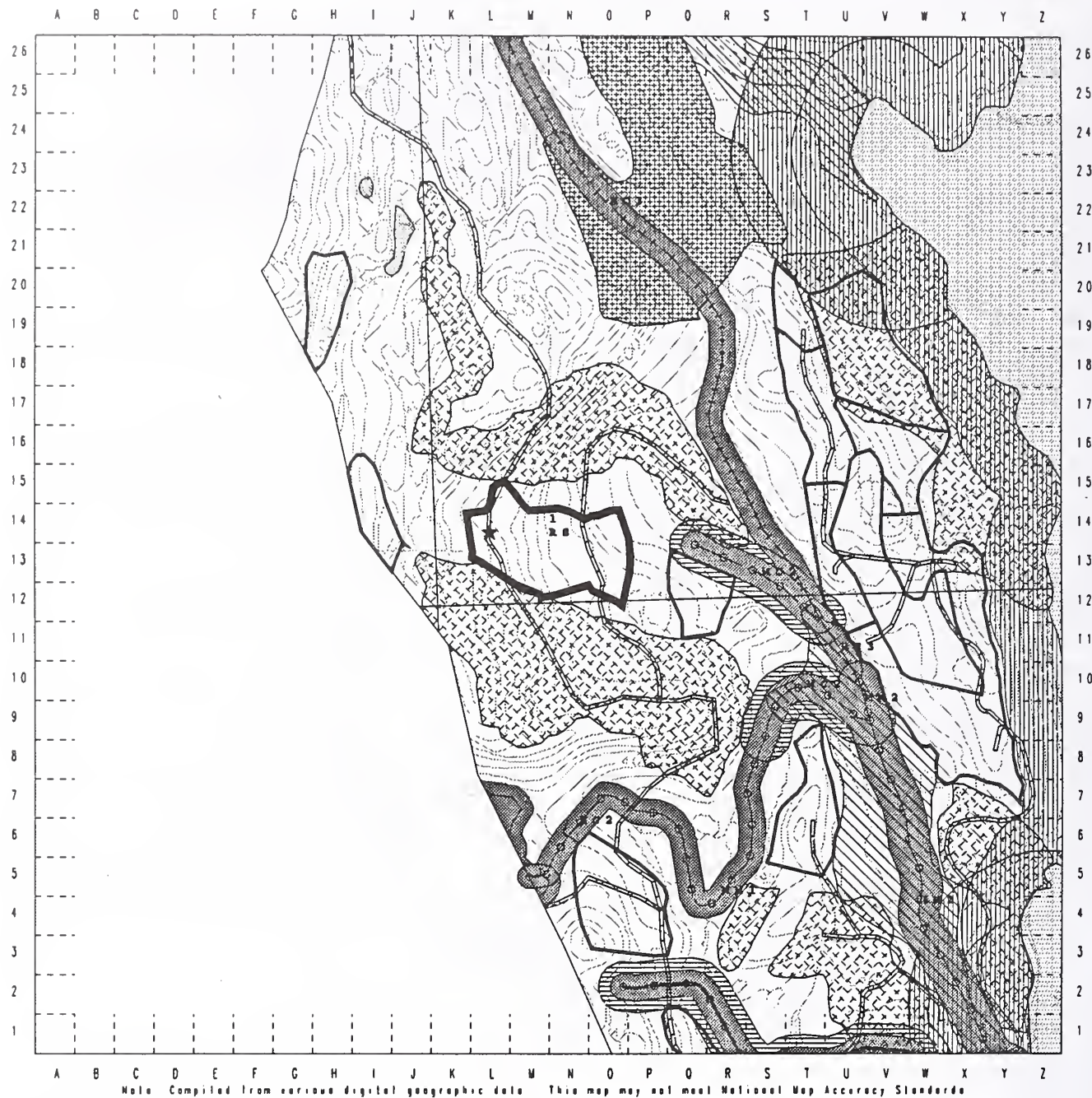
SILVICULTURE INPUT

Low productivity. Monitor regeneration to determine if planting will be necessary. Proposed unit location will create adjacency concern with NSL units 17 and 16 bringing total size of opening to 138 acres. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 779 DEIS# 120

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s08/staff/uc/draftcard/dcl095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Setting Line
- Other UC DEIS Unit Boundary
- Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 11.7
 Volc 5 - 8.4
 Volc 6 - 0
 Volc 7 - 0
 Total Acres - 20.1
 Potential MBF - 612.2
 Quarter Quad - KTHC5SE
 VCU Number - 746
 Photo Number - 1390-23
 Alternative Pattern - 023400
 * Lending

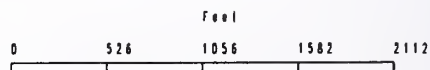
LOGGING SYSTEMS Abbrev.

RS Running Skyline
 HE Helicopter
 HL High Lead
 SL Slack Line
 SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 121 Planned Acres: 5.0 Estimated Volume: 154.6 In Alternatives: 2, 3, 4, 0
Silvicultural System : Clearcut Settings: 1 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
Mgt Area: K32 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 780 Original LSTA Unit: 746-780

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 4.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: W
Volume class breakdown: Class 4: 0.0 Class 5: 4.3 Class 6: 0.0 Class 7: 0.0 Low Productive 0.7
Archeology 0-100: 0.0 100-200: 0.0 Seen 5.1 Not Seen 0.0 Primary VQO: PR Recreation: SPNM
Mass movement index: Low 0.2 Medium 4.9 High 0.0 Very High 0.0 Wetland 0.2 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/24/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit can be seen from North Saddle lakes potential recreation site. Proposed VQO is partial retention.

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

The North Saddle Lakes area is known to contain some carbonate rock and karst features. If karst features are identified during unit layout, follow Ketchikan Area cave management direction and guidelines. NRB 8/10/95

SILVICULTURE INPUT

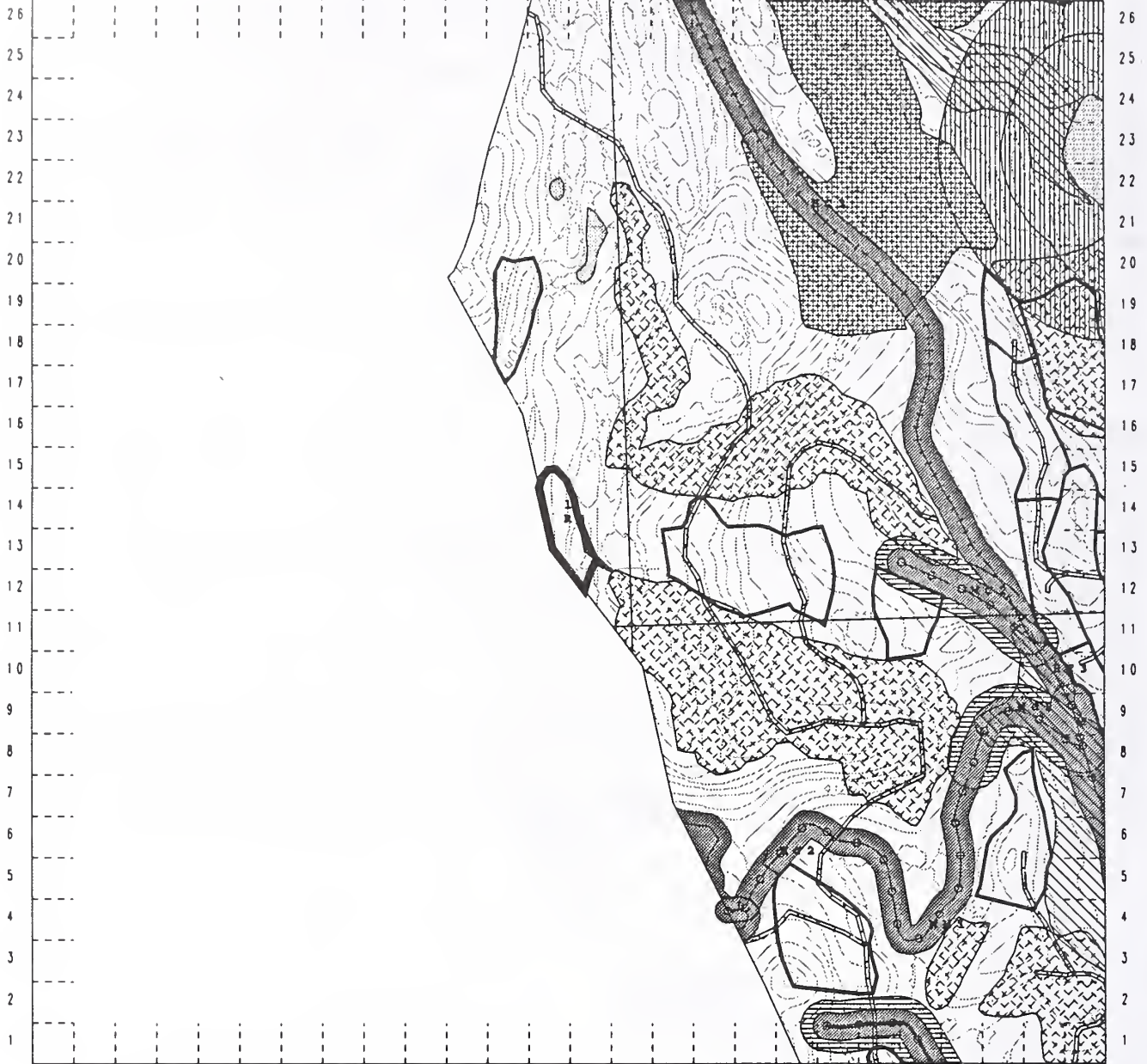
High productivity. Possible adjacency with NSL Unit 16 bringing total size of opening to 71 acres. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 780 DEIS# 121

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/drillcor4/dc1095.sml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream

Section Line
Planning Road
Unit Boundary
Setting Line
Other DC DEIS Unit Boundary
Contour or Ortho Line



Beech or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index 4 Soil

Volc 4 - 0

Volc 5 - 4.3

Volc 6 - 0

Volc 7 - 0

Total Acres - 5

Potential MBF - 154.6

Quarter Good - KINCSE

VCU Number - 746

Photo Number - 1390-23

Alternative Pattern - 023408

* Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 122 Planned Acres: 6.0 Estimated Volume: 198.1 In Alternatives: 2, 3, 4, 5
Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5SE Photo: 1890-23 Logging systems: HE
Mgt Area: K32 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 782 Original LSTA Unit: 746-782

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 5.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SE
Volume class breakdown: Class 4: 0.0 Class 5: 5.6 Class 6: 0.0 Class 7: 0.0 Low Productive 0.4
Archeology 0-100: 0.0 100-200: 0.0 Seen 5.2 Not Seen 0.9 Primary VQO: PR Recreation: SPNM
Mass movement index: Low 0.9 Medium 5.1 High 0.0 Very High 0.0 Wetland 0.9 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

No concerns. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit can be seen from proposed North Saddle Lakes recreation site. Identified VQO is partial retention.
Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/10/95

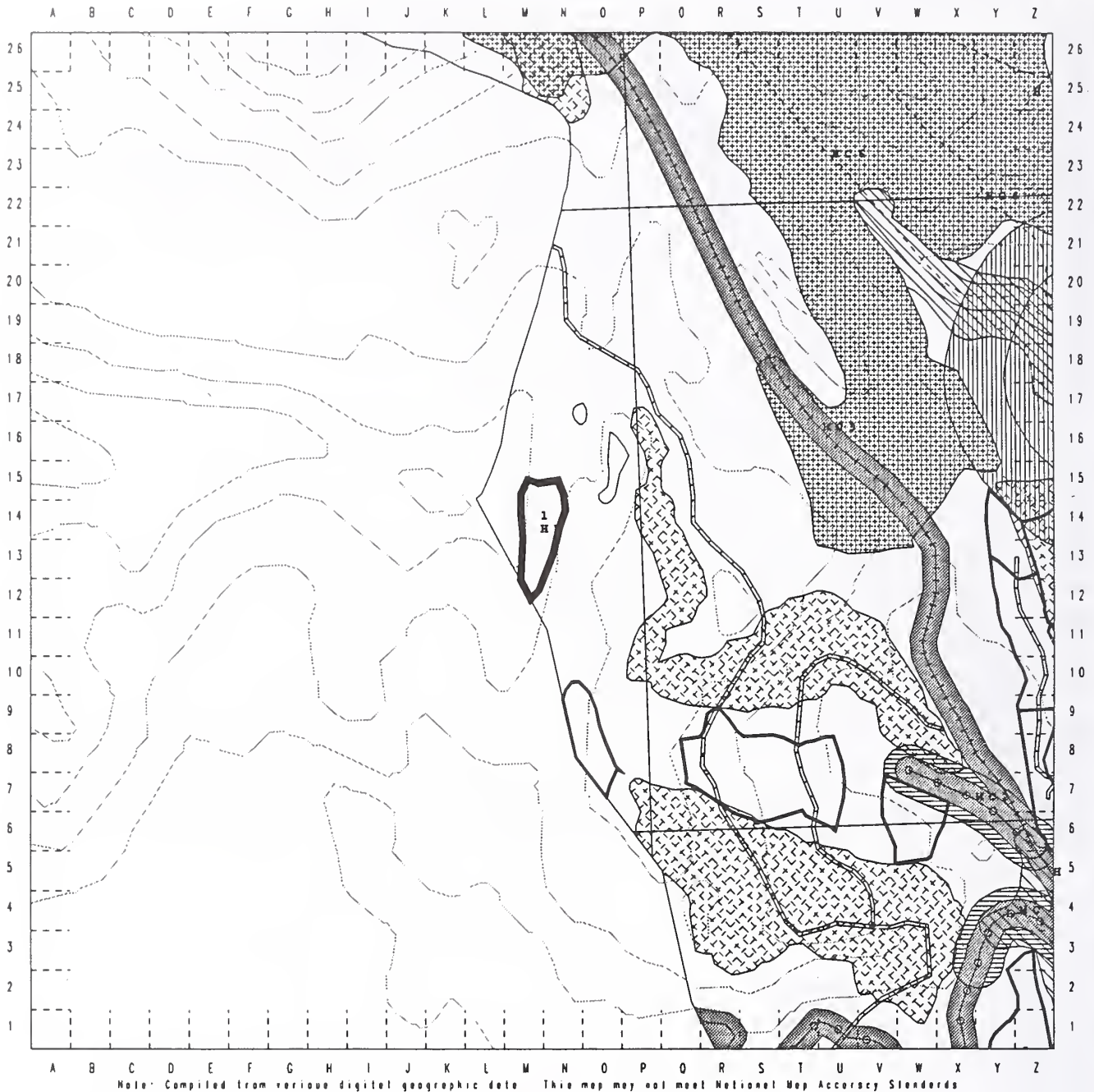
SILVICULTURE INPUT

Low productivity, probable regeneration problems. Propose deferring from harvest or applying shelterwood system to protect existing regeneration and minimize visual impact. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 702 DEIS# 122

Mapscale 1:15840 (4 inch to Mile)

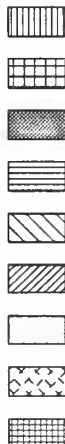
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Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 0
Volc 5 - 5.6
Volc 6 - 0
Volc 7 - 0
Total Acres - 6
Perennial MRF - 198.1
Quarter Quad - KTNCSSE
VCU Number - 746
Photo Number - 1890-5
Alternative Pattern - 023450
★ Landing

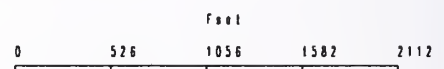
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stoleplone



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 123 Planned Acres: 15.7 Estimated Volume: 343.1 In Alternatives: 2, 0, 4, 0
Silvicultural System: Shelterwood Settings: 1 Quad: KTNC5SE Photo: 1390-25 Logging systems: HE
Mgt Area: K32 VCU: 746 Watershed: D75A WAA: 406 NOI Unit: 795 Original LSTA Unit: 746-795

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 9.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
Volume class breakdown: Class 4: 6.1 Class 5: 3.5 Class 6: 0.0 Class 7: 0.0 Low Productive 1.6
Archeology 0-100: 0.0 100-200: 0.0 Seen 15.7 Not Seen 0.0 Primary VQO: PR Recreation: RM
Mass movement index: Low 15.7 Medium 0.0 High 0.0 Very High 0.0 Wetland 15.7 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists mainly of forested wetlands (BMP 12.5), mixed conifer plant series on poorly drained, organic soils.
Helicopter yarding will provide full log suspension and minimize surface disturbance (BMP 13.9). NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/24/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is partial retention. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

Unit is located near Swan Lake power transmission line. Helicopter yarding will need to avoid these overhead power lines. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

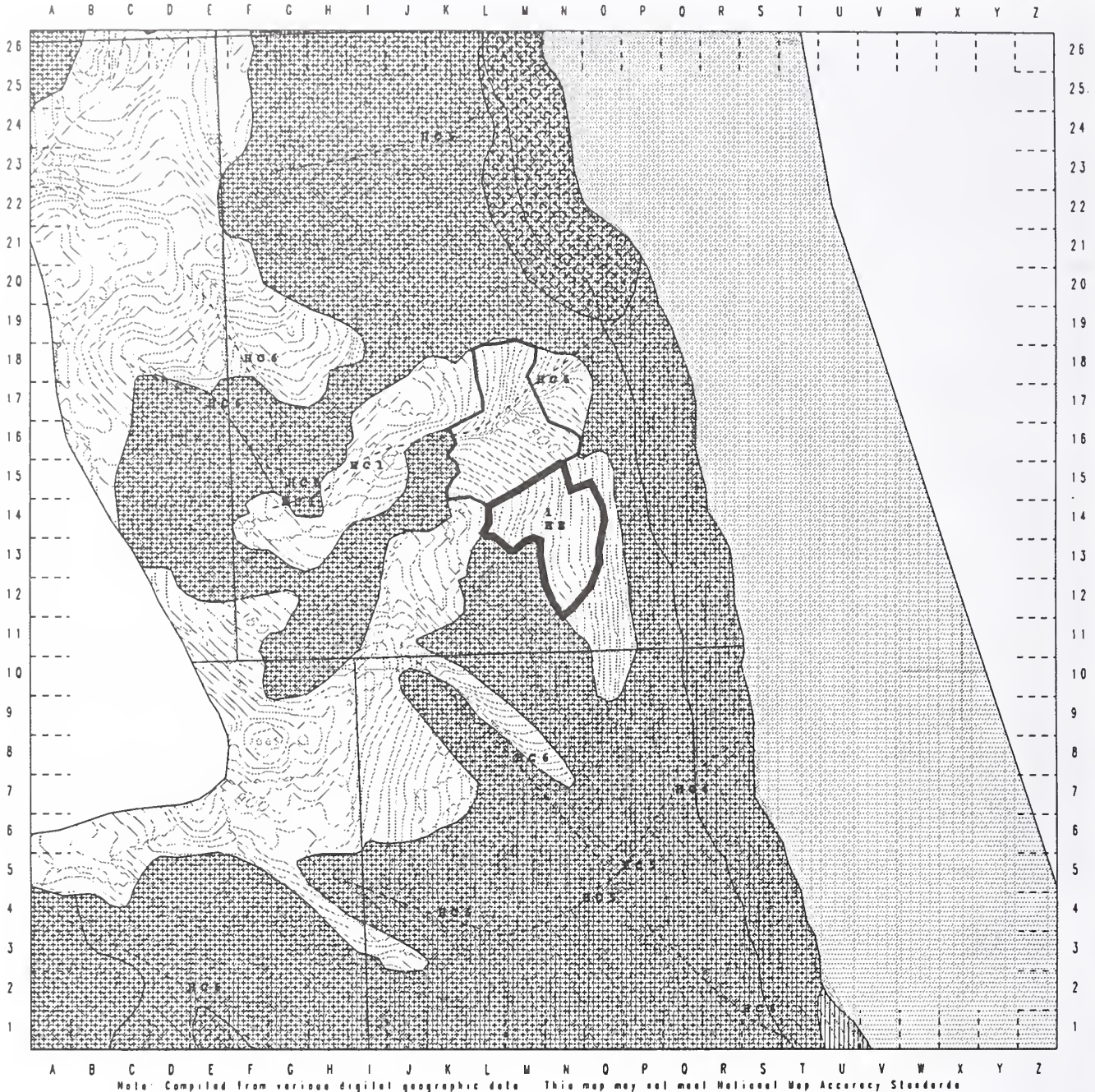
The North Saddle Lakes area is known to contain some carbonate rock and karst features. If karst features are identified during unit layout Ketchikan Area cave management direction and guidelines should be followed. NRB 8/10/95

SILVICULTURE INPUT

High productivity. Apply shelterwood system leaving all trees 13" DBH and under standing. CBG 10/17/95
Beware of power lines.

Upper Carroll Study Area Unit Schematic - Unit 795 DEIS# 123

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draftcard/dct095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Wetland Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 6.1
Volc 5 - 3.5
Volc 6 - 0
Volc 7 - 0
Total Acres - 15.7
Potential MBF - 343.1
Quarter Quad - K1NC5SE
VCU Number - 746
Photo Number - 1390-25
Alternative Pattern - 020400
★ Landing

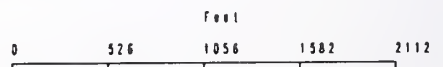
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stereoplone



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 124 Planned Acres: 20.5 Estimated Volume: 527.5 In Alternatives: 2, 0, 4, 0
Silvicultural System: Shelterwood Settings: 2 Quad: KTNC5SE Photo: 1390-26 Logging systems: HE
Mgt Area: K32 VCU: 746 Watershed: D75A WAA: 406 NOI Unit: 799 Original LSTA Unit: 746-799

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 16.7 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: NE
Volume class breakdown: Class 4: 11.6 Class 5: 5.1 Class 6: 0.0 Class 7: 0.0 Low Productive 1.5
Archeology 0-100: 0.0 100-200: 0.0 Seen 20.5 Not Seen 0.0 Primary VQO: PR Recreation: RM
Mass movement index: Low 20.5 Medium 0.0 High 0.0 Very High 0.0 Wetland 20.5 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists mainly of forested wetlands (BMP 12.5), mixed conifer plant series on poorly drained, organic soils.
Helicopter yarding will provide full log suspension and minimize surface disturbance (BMP 13.9). NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter. Verify feasibility flying turns over Powerline.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit can be seen from Carroll Inlet. Identified VQO is partial retention. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

Unit is located near Swan Lake power transmission line. Helicopter yarding will need to avoid these overhead power lines. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

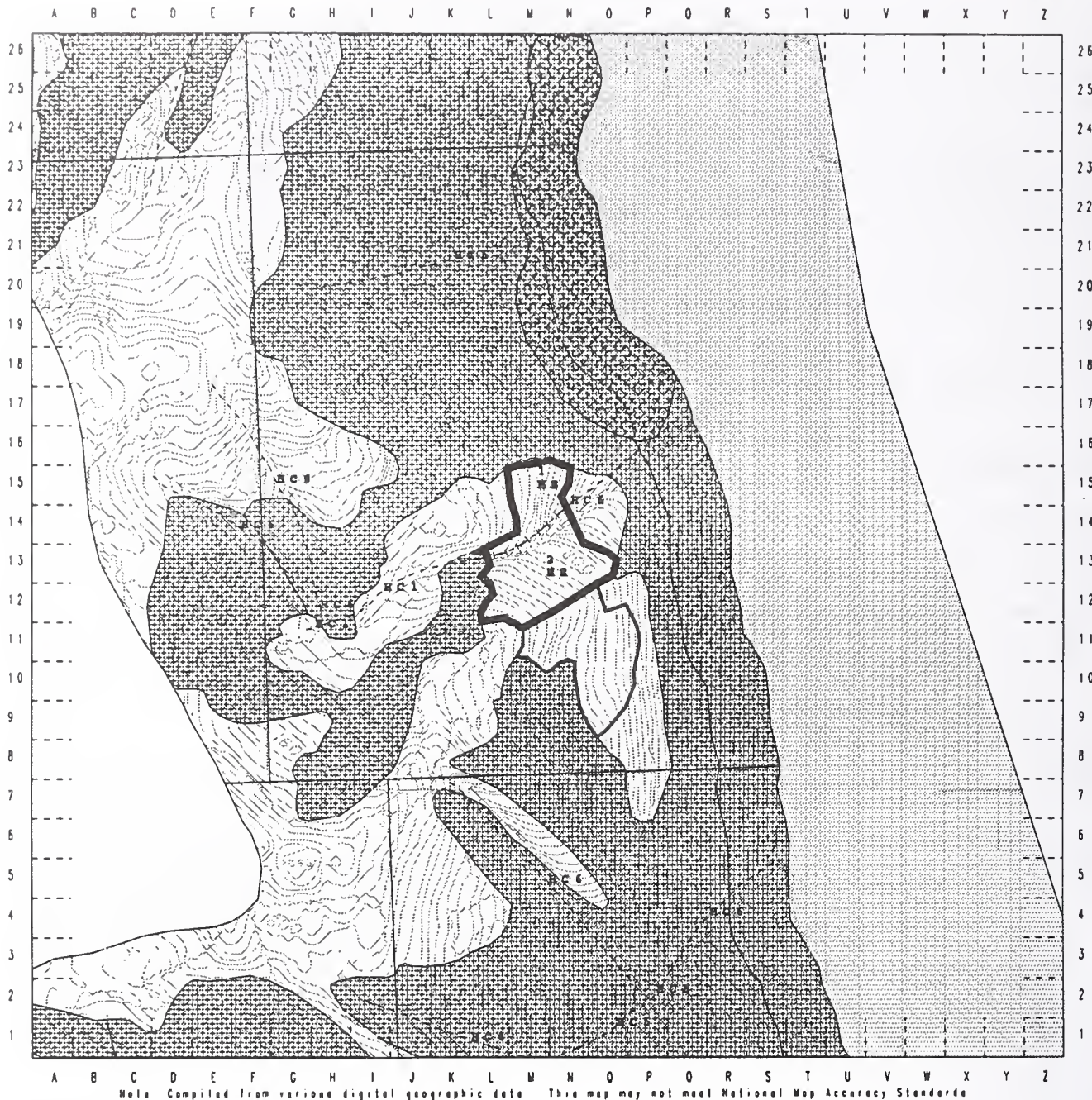
The North Saddle Lakes area is known to contain some carbonate rock and karst features. If karst features are identified during unit layout Ketchikan Area cave management direction and guidelines should be followed. NRB 8/10/95

SILVICULTURE INPUT

Moderate productivity with large areas of hydric soils. Apply shelterwood system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 799 DEIS# 124

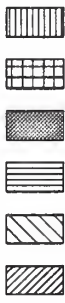
Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u00/stall/ac/draftcar4/dcl095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer



Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 11.6
Volc 5 - 5.1
Volc 6 - 0
Volc 7 - 0
Total Acres - 20.5
Potential MBF - 527.5
Quarter Quad - K1NC55E
VCU Number - 746
Photo Number - 1390-26
Alternative Pattern - 020400
★ Logging

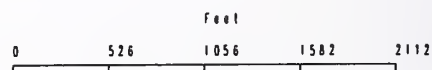
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slick Line
SH Shovel Yarding

Projection - Spherocone



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 125 Planned Acres: 3.5 Estimated Volume: 72.8 In Alternatives: 2, 3, 4, 5
 Silvicultural System: Clearcut Settings: 1 Quad: KTNC5SE Photo: 1390-23 Logging systems: RS
 Mgt Area: K32 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 823 Original LSTA Unit: 746-823

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 2.3 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: E
 Volume class breakdown: Class 4: 2.3 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 3.5 Primary VQO: MM Recreation: RM
 Mass movement index: Low 3.5 Medium 0.0 High 0.0 Very High 0.0 Wetland 3.5 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of forested wetlands, low volume, western hemlock and mixed conifer plant series on poorly drained, peat soils (BMP 12.5). Recommend shovel logging to provide full log suspension on this site. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

Coho/Pink/Chum timing (June 15 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is adjacent to a Class II stream and will require a minimum 100 foot TTRA buffer (BMP 12.6a).

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/10/95

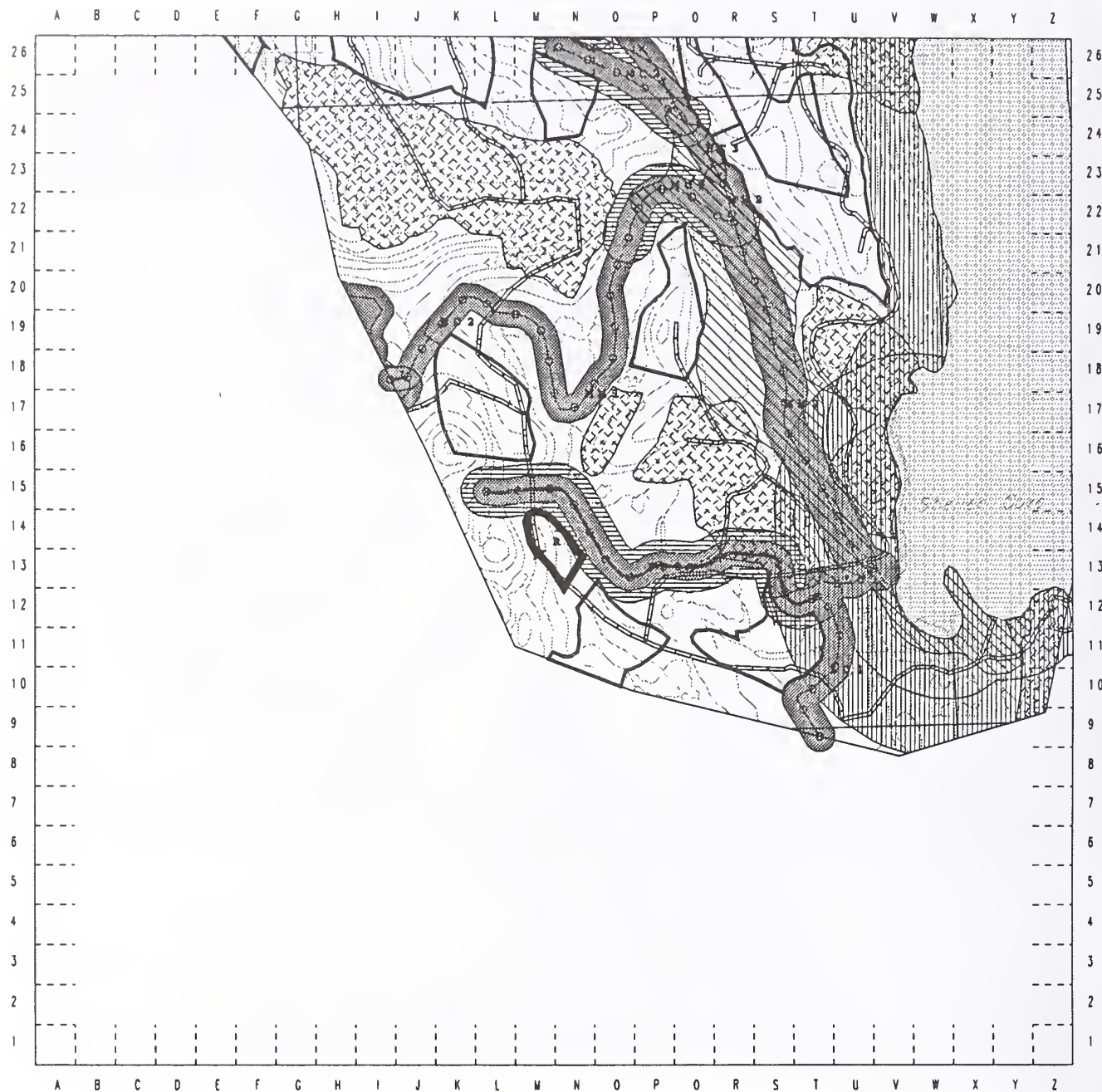
SILVICULTURE INPUT

Low productivity. Consider deferring from harvest, otherwise plant entire unit with Sitka spruce, Alaska yellow cedar and western red cedar mix. Attempt to blend unit into surrounding muskeg system. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 823 DEIS# 125

Mapscale 1:15840 (4 inch to Mile)

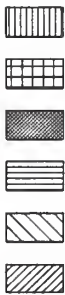
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Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS
Unit Boundary
Contour or Ortho
Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 2.3
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 3.5
Potential MBF - 72.8
Operator Code - K1MC5SE
VCU Number - 746
Photo Number - 1390-23
Alternative Patterns - 023450
★ Logging

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Head

Feet
0 528 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 126 Planned Acres: 10.2 Estimated Volume: 268.6 In Alternatives: 2, 3, 4, 5
Silvicultural System : Clearcut Settings: 3 Quad: KTNC5SE Photo: 1390-23 Logging systems: SH
Mgt Area: K32 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 824 Original LSTA Unit: 746-824

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 7.0 Spruce 0.0 Mixed Hem/Spr 1.8 Nonforested 0.0 Aspect: NE
Volume class breakdown: Class 4: 7.0 Class 5: 1.8 Class 6: 0.0 Class 7: 0.0 Low Productive 1.4
Archeology 0-100: 0.0 100-200: 10.2 Seen 2.0 Not Seen 8.2 Primary VQO: MM Recreation: RM
Mass movement index: Low 10.0 Medium 0.2 High 0.0 Very High 0.0 Wetland 10.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists entirely of forested wetlands (BMP 12.5). Most of unit suitable for shovel yarding (BMP 13.9).
NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Shovel. Confirm final road and landing locations. Establish 1000' estuary buffer and designate unit boundary.

ENGINEERING INPUT

Coho/Pink/Chum timing (June 15 - August 7) may apply to all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is adjacent to two Class II stream and will require a 100 foot TTRA buffer (BMP 12.6a).

WILDLIFE INPUT

Modify the east portion of this unit to stay out of the 1,000 foot estuary buffer.

RECREATION / VISUALS INPUT

Small portion of unit may be seen from Carroll Inlet. Identified VQO is maximum modification.
Beach and estuary buffer will screen unit. Unit needs to be trimmed to stay out of estuary buffer. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

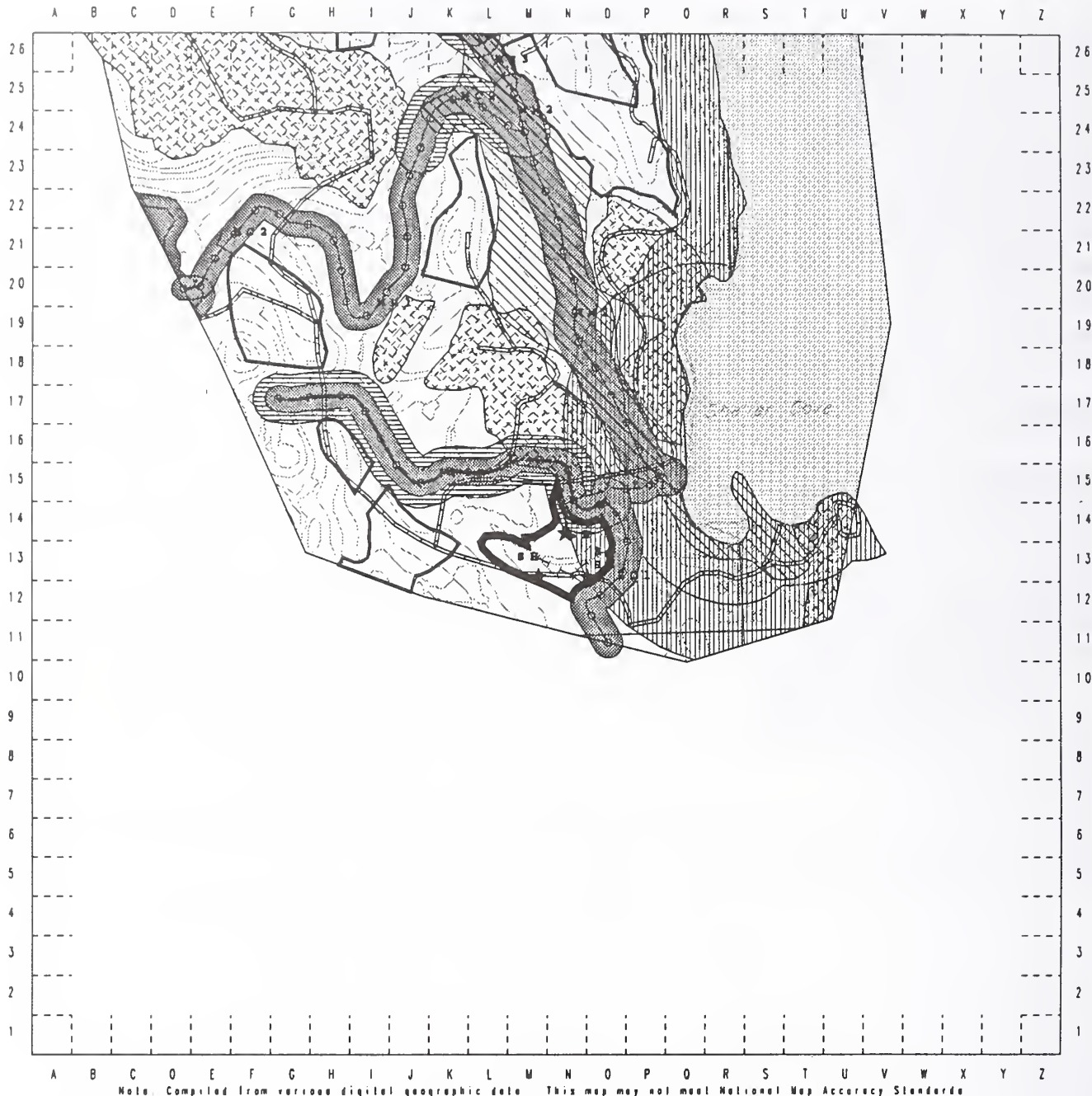
No concerns. NRB 8/10/95

SILVICULTURE INPUT

This unit has moderate volume, with large areas of Hydric soils. The entire unit will require planting. Consider deferring from harvest. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 024 DEIS# 126

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/draftcard/dct095 aml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other DC DEIS Unit Boundary
Contour or Ortho Line



Beech or Hemlock Buffer
Private Land
No Cut Buffer
Vertical or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 7
Volc 5 - 1.8
Volc 6 - 0
Volc 7 - 0
Total Acres - 10.2
Potential MBF - 268.6
Quarter Quad - KTHCSSE
VCU Number - 746
Photo Number - 1390-23
Alternative Pattern - 023450
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 127 Planned Acres: 8.8 Estimated Volume: 204.9 In Alternatives: 2, 3, 4, 5
Silvicultural System: Clearcut Settings: 1 Quad: KTNC5SE Photo: 1390-23 Logging systems: SH
Mgt Area: K32 VCU: 746 Watershed: D79A WAA: 406 NOI Unit: 825 Original LSTA Unit: 746-825

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 6.8 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: NE
Volume class breakdown: Class 4: 6.8 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 2.0
Archeology 0-100: 0.0 100-200: 0.9 Seen 0.0 Not Seen 8.8 Primary VQO: MM Recreation: RM
Mass movement index: Low 8.8 Medium 0.0 High 0.0 Very High 0.0 Wetland 8.8 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of forested wetlands (BMP 12.5). Suitable for shovel logging (BMP 13.9). NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Shovel. Confirm final road and landing locations.

ENGINEERING INPUT

Coho/Pink/Chum timing (June 15 - August 7) may apply to all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit is adjacent to a Class II stream and will require a 100 foot TTRA buffer (BMP 12.6a).

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/10/95

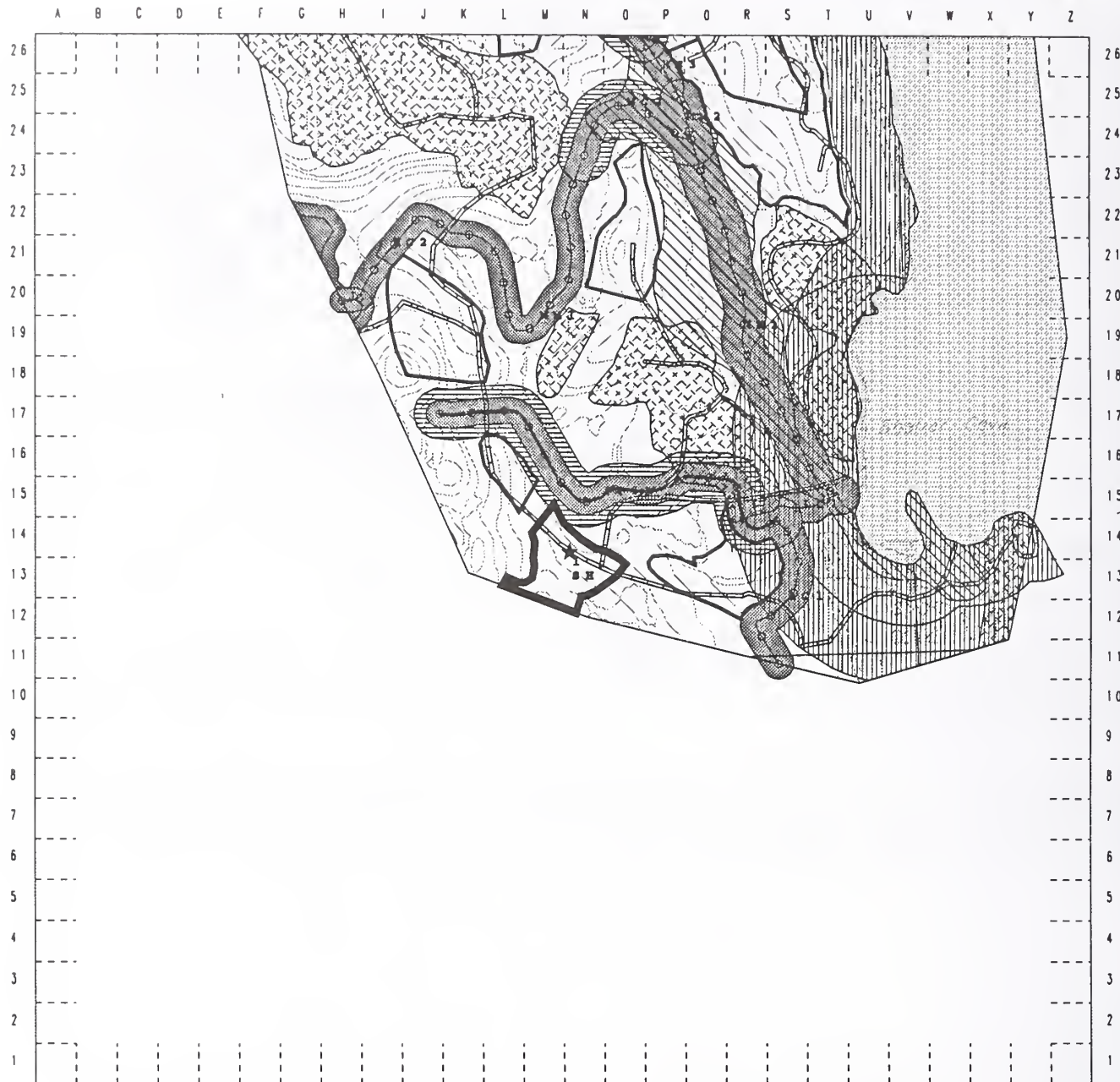
SILVICULTURE INPUT

Low productivity, containing mostly Hydric soils. Entire unit will require planting a mix of Sitka spruce, Alaska yellow and western red cedar. Attempt to blend unit into surrounding muskeg system. Consider deferring from harvest due to regeneration concerns. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 025 DEIS# 127

Mapscale 1:15840 (4 inch to Mile)

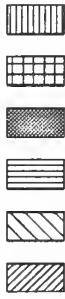
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Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index & Soil

Volc 4 - 6.8
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 8.8
Potential MBF - 204.8
Quarter Quad - K1NC5SE
VCU Number - 746
Photo Number - 1390-23
Alternative Pattern - 023450
★ Landing

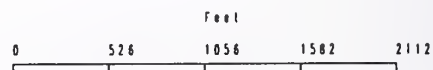
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 128 Planned Acres: 14.7 Estimated Volume: 481.0 In Alternatives: 0, 0, 0, 0
 Silvicultural System: Shelterwood Settings: 1 Quad: KTNC5SE Photo: 1790-64 Logging systems: HE
 Mgt Area: K32 VCU: 737 Watershed: C41B WAA: 510 NOI Unit: 950 Original LSTA Unit: 737-950

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 14.7 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 3.6 Class 5: 11.0 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 14.7 Not Seen 0.0 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 0.0 High 14.7 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

High landslide potential throughout this unit, MMI=3 (BMP 13.5). Recommend at least partial suspension when yarding (BMP 13.9). NRB 8/10/95.

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

High mass movement index soils. Road construction must minimize landslide potential (BMP14.7)

FISH/WATERSHED INPUT

High gradient contained (HC5) stream channel within unit has high sediment delivery potential to Neets Creek above SSRAA fish hatchery.

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Neets Bay. Identified VQO is modification. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

Unit is uphill from SSRAA facilities at Neets Bay. Helicopter yarding may take place over these facilities. SSRAA administrators should be advised when logging takes place. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

V-notch thru middle (M-14 to L-13) of the unit. Maintain windfirm stand of trees within this V-notch (BMP 13.5). NRB 8/10/95

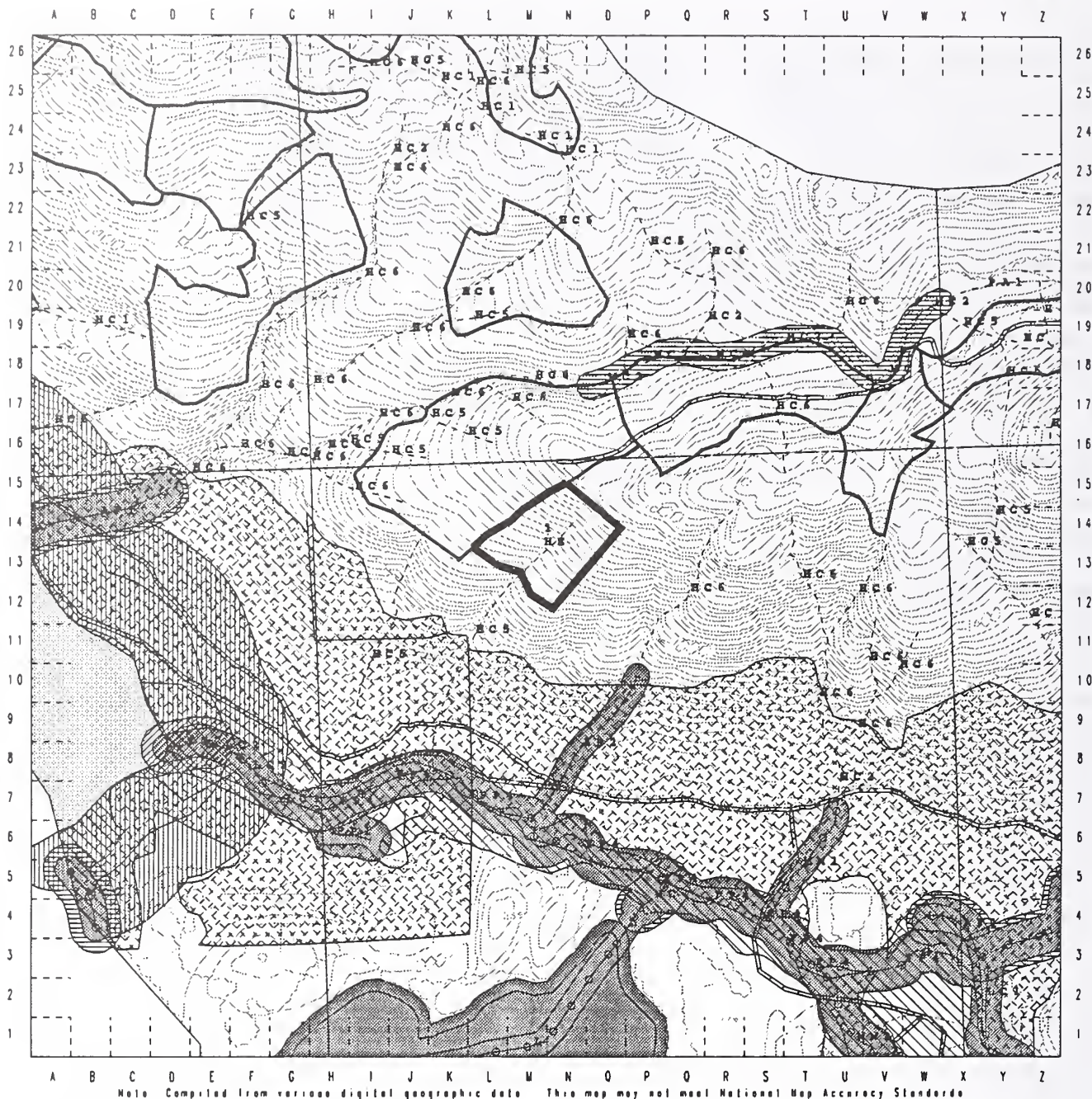
SILVICULTURE INPUT

Highly productive with steep slopes. Apply shelterwood harvest system leaving all trees 13" DBH and under standing if helicopter yarded. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 950 DEIS# 128

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95. /s08/siml/uc/draft/ucd/dc1095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 3.6
Volc 5 - 11
Volc 6 - 0
Volc 7 - 0
Total Acres - 14.7
Potential MBI - 481
Quarter Quad - KTH055E
VCU Number - 737
Photo Number - 1790-54
Alternative Pollard - 000000

* Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 129 Planned Acres: 54.8 Estimated Volume: 482.4 In Alternatives: 2, 0, 4, 5
 Silvicultural System: Clearcut Settings: 5 Quad: KTNC5SE Photo: 1890-10 Logging systems: RS SH
 Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 951 Original LSTA Unit: 744-951

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: S
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 54.8
 Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 54.8 Primary VQ0: MM Recreation: P1
 Mass movement index: Low 54.8 Medium 0.0 High 0.0 Very High 0.0 Wetland 54.8 Mix Wetland 0.0
 % of High Value Habitat: Deer- 72% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists mostly of very-low volume stand of mixed conifer plant series on poorly drained peat (wetland) soils (BMP 12.5). Much of this area is suitable for shovel logging (BMP 13.9). A couple of small stands of western hemlock on shallow, well drained soils is in the western part of this unit (L-17 and K-13). These soils are on steeper ground and are not suitable for shovel yarding (BMP 13.9). NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Shovel. Confirm final road and landing locations.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

Maintain distribution of snags by leaving 1-5 acre-sized islands of green trees at a rate of 1 acre of island for every 20 acres harvested. Leave islands must be compatible with logging systems and safe working conditions.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

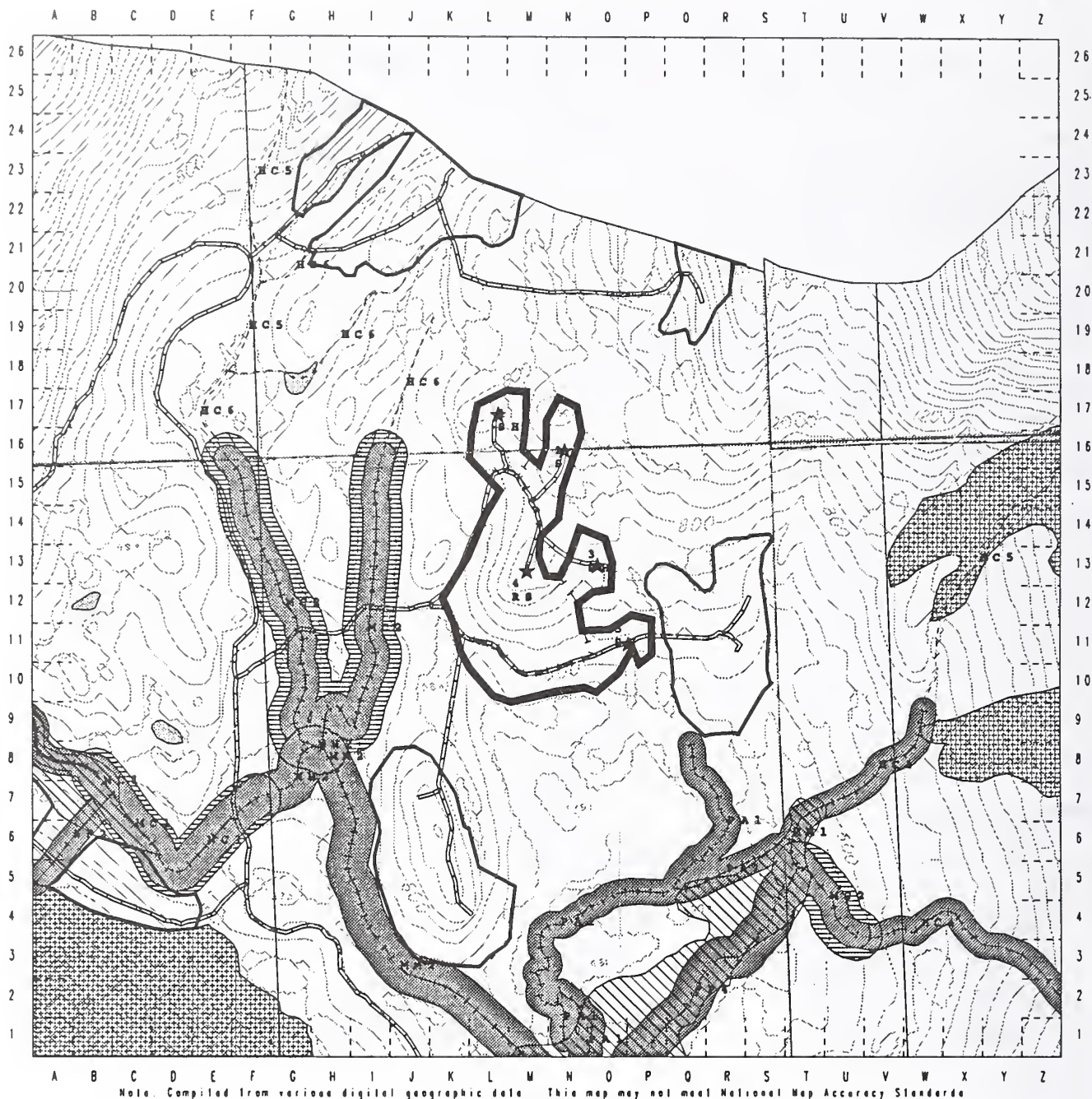
No concerns. NRB 8/10/95

SILVICULTURE INPUT

This unit has low to moderate volume, with small areas of Hydric soils that will need to be planted. (8 acres)
 Consider deferring northern third of unit due to regeneration concerns. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 951 DEIS# 129

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u06/staff/nc/draftcard/dcl095.dml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

- Class 1 Stream
- Class 2 Stream
- Class 3 Stream
- Section Line
- Planning Roads
- Unit Boundary
- Setting Line
- other UC DEIS Unit Boundary
- Contour or Ortho Line

- Beach or Estuary Buffer
- Private Land
- No Cut Buffer
- Partial or Selective Harvest Buffer
- Riparian Soil Buffer
- No Programmed Harvest Buffer
- Body of Water
- Prior Harvest
- Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 54.8
Potential MBF - 482.4
Quarter Quad - K1MC5NE
VCU Number - 744
Photo Number - 1890-41
Alternative Pattern - 020450
★ Landing

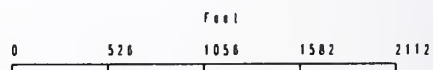
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 130 Planned Acres: 25.4 Estimated Volume: 863.3 In Alternatives: 2, 0, 4, 5
Silvicultural System: Clearcut Settings: 2 Quad: KTND5SE Photo: 1890-44 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 952 Original LSTA Unit: 744-952

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 14.3 Spruce 0.0 Mixed Hem/Spr 10.3 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 14.3 Class 5: 0.0 Class 6: 10.3 Class 7: 0.0 Low Productive 0.8
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 25.4 Primary VQO: MM Recreation: Pl
Mass movement index: Low 0.0 Medium 0.0 High 21.8 Very High 3.5 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 78% Martin- 78% Otter- 0% Eagle- 0% Black Bear- 78%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

The upper parts of this unit (N-0-13) have a high landslide potential. MMI=3 (BMP 13.5). Unit contains about 4 acres of forested wetlands in the northeast corner (M-14) (BMP 12.5). Recommend at least partial log suspension when yarding these areas (BMP 13.9). Upper slopes (N-14 to L-12) consist of subalpine ecosystem and includes mountain hemlock plant series. Natural regeneration may be a problem on these soils. Northwest corner (K-14) of unit consists of an alluvial/colluvial fan may contain fish habitat (BMP 12.6). NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations. Eastern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

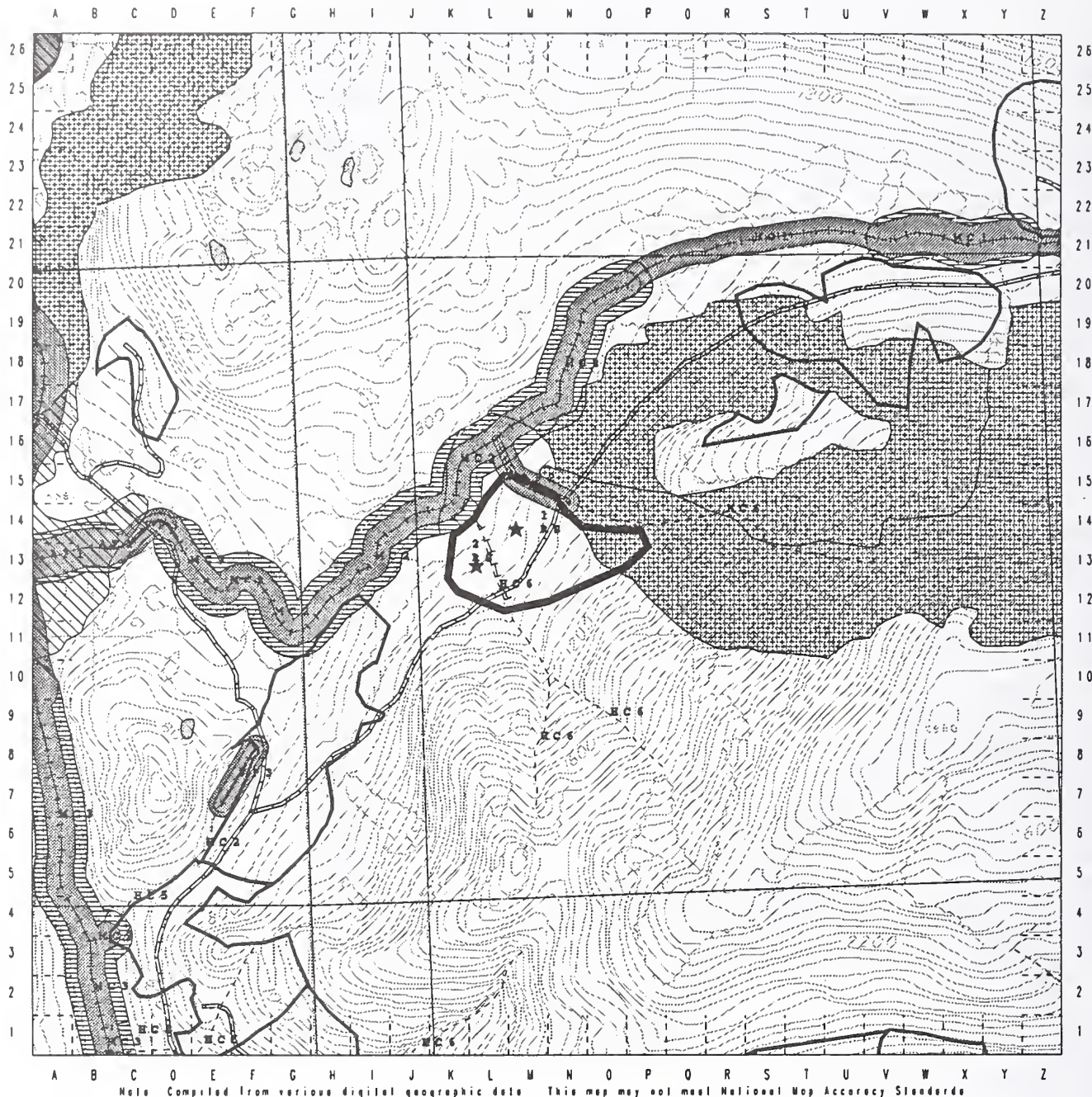
Harvest unit is next to avalanche tract (P-14 to M-15). Avalanching has potential to damage regeneration and transportation facilities. Recommend that an avalanche firm buffer of trees be maintained along the northeast unit boundary. NRB 8/10/95

SILVICULTURE INPUT

High productivity with areas of high elevation and Hydric soils that will need to be planted. (6 acres) Plant Sitka spruce adjacent to existng avalanche chute. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 952 DEIS# 130

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/staff/uc/draft/cord/uc1095.sml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 14.3
Volc 5 - 0
Volc 6 - 10.3
Volc 7 - 0
Total Acres - 25.4
Potential MBF - 863.3
Quarter Quad - KTHC4NW
VCU Number - 744
Photo Number - 1890-44
Alternative Pattern - 020450
★ Landing

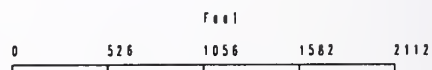
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplene



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 131 Planned Acres: 35.7 Estimated Volume: 876.9 In Alternatives: 2, 0, 4, 5
Silvicultural System: Clearcut Settings: 3 Quad: KTNC5NE Photo: 1890-44 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 953 Original LSTA Unit: 744-953

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 30.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
Volume class breakdown: Class 4: 30.1 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 5.6
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 35.7 Primary VQO: MM Recreation: P1
Mass movement index: Low 3.1 Medium 0.0 High 18.5 Very High 14.0 Wetland 3.1 Mix Wetland 32.6
% of High Value Habitat: Deer- 56% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit has a medium potential for landslides, MMI=2 (BMP 13.5). No special mitigation measures are required.
NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
Southwestern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize potential for landslides. (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

Unit is located next to a large avalanche tract (N-13 to Q-15). Regeneration and transportation facilities may suffer avalanche damage. Recommend that an avalanche firm buffer of trees be maintained along the eastern unit boundary.
NRB 8/10/95

SILVICULTURE INPUT

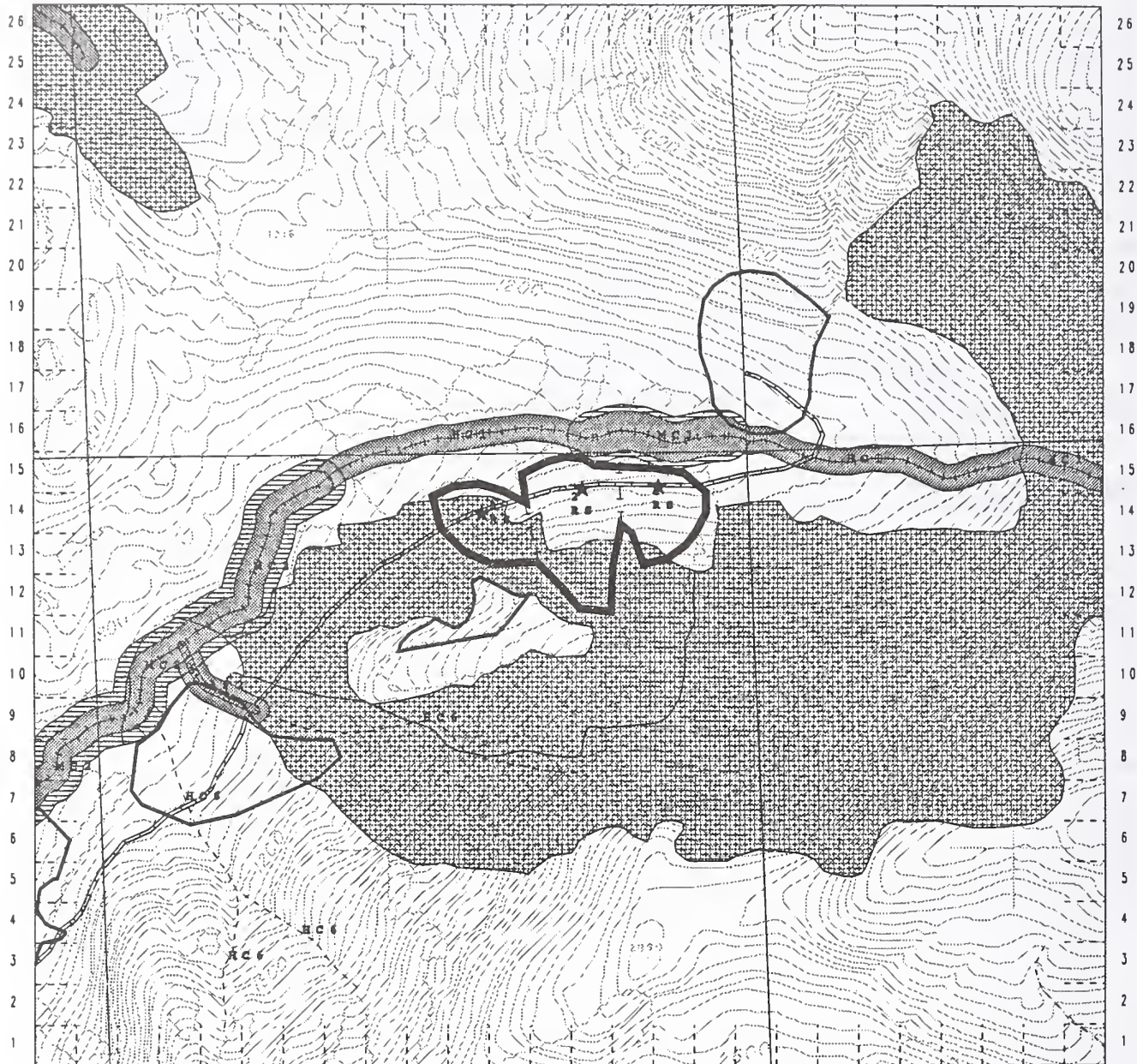
High productivity with areas of high elevation and high mass movement soils. Planting will be required, using high elevation Sitka spruce and Alaska yellow cedar if available. Pland Sitka spruce adjacent to avalanche chute.(8 acres)

Upper Carroll Study Area Unit Schematic - Unit 953 DEIS# 131

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /u08/stall/uc/draftcar4/dc1095 eml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream



Class 2 Stream



Class 3 Stream



Section Line



Planning Roads



Unit Boundary



Setting Line



other UC DEIS
Unit Boundary
Contour or Ortho
Line



Beach or Estuary Buffer



Private Land



No Cut Buffer



Partial or Selective Harvest Buffer



Riparian Soil Buffer



No Programmed Harvest Buffer



Body of Water



Prior Harvest



Mass Movement Index & Soil

Volc 4 - 30.1

Volc 5 - 0

Volc 6 - 0

Volc 7 - 0

Total Acres - 35.7

Potential MBF - 876.9

Quarter Quad - KTN4NW

VCU Number - 744

Photo Number - 1890-44

Alternative Pattern - 020450

★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline

HE Helicopter

HL High Lead

SL Slack Line

SH Shovel Yarding

Projection - Stereoplone



Eagle Nest

Feet

0 526 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 132 Planned Acres: 23.7 Estimated Volume: 602.8 In Alternatives: 2, 0, 4, 5
Silvicultural System : Clearcut Settings: 1 Quad: KTNC4NW Photo: 1890-44 Logging systems: RS
Mgt Area: K32 VCU: 744 Watershed: D69B WAA: 406 NOI Unit: 954 Original LSTA Unit: 744-954

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 21.1 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 21.1 Class 5: 0.0 Class 6: 0.0 Class 7: 0.0 Low Productive 2.6
Archeology 0-100: 0.0 100-200: 0.0 Seen 0.0 Not Seen 23.7 Primary VQ0: MM Recreation: Pl
Mass movement index: Low 0.2 Medium 0.0 High 23.5 Very High 0.0 Wetland 0.2 Mix Wetland 0.0
% of High Value Habitat: Deer- 84% Martin- 84% Otter- 0% Eagle- 0% Black Bear- 84%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Part of unit above 1,300' elevation (L-14 to N-14) made up of high landslide potential soils, MMI=3 (BMP 13.5).
Recommend at least partial log suspension on these soils (BMP 13.9). Lower slopes have a low landslide potential,
MMI=1. No special mitigation measures are recommended on these soils. Elevations above 1,500' are subalpine sites
with mountain hemlock plant series. Regeneration may be a problem on these sites. NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline. Confirm final road and landing locations.
Northern portion of planned unit appears to be a blindlead. Verify feasibility and modify unit boundary as required.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

No concerns WEA 8/29/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

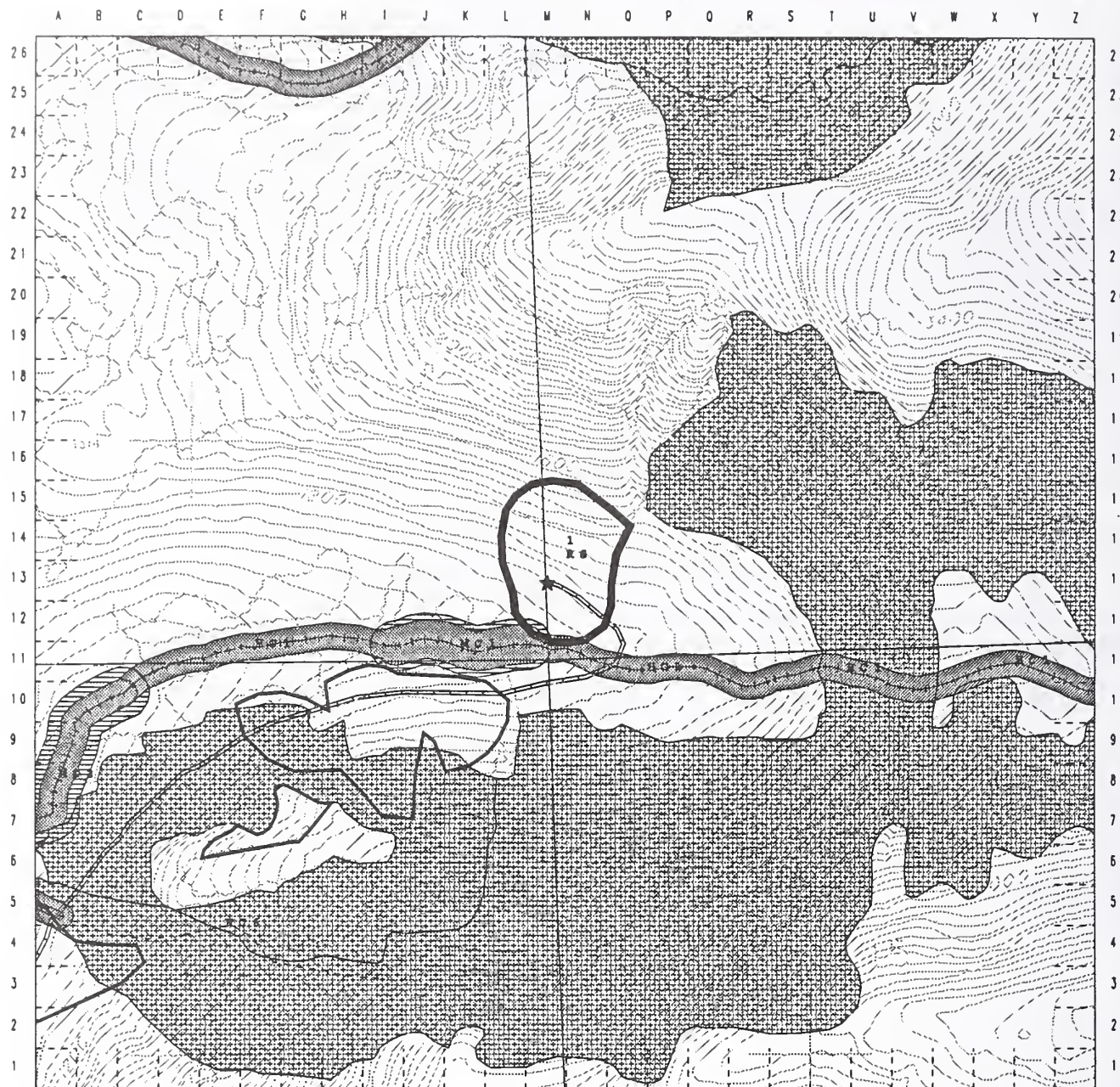
Unit is located next avalanche tract (0-12 to 0-15). Regeneration and transportation facilities may be damaged by
avalanches. Recommend an avalanche firm buffer be maintained along the eastern unit boundary. NRB 8/10/95

SILVIVULTURE INPUT

High productivity with areas of high elevation, high mass movement soils, as well as existing avalanche chutes.
Planting will be required, using Alaska yellow cedar and high elevation Sitka spruce.(8 acres) CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 954 DEIS# 132

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/stell/uc/draftcord/dct095 omf



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

Volc 4 - 21.1
Volc 5 - 0
Volc 6 - 0
Volc 7 - 0
Total Acres - 23.7
Potential MBF - 802.8
Operator Code - KTHC4HW
VCU Number - 744
Photo Number - 1890-44
Alternative Pattern - 020450
★ Landing

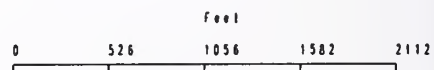
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stolephone



Eagle Head



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 133 Planned Acres: 12.2 Estimated Volume: 552.1 In Alternatives: 2 . 0 , 0 , 0
 Silvicultural System : Shelterwood Settings: 1 Quad: KTNC4NW Photo: 1890-2 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 955 Original LSTA Unit: 744-338

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 12.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 12.2 Class 7: 0.0 Low Productive 0.0
 Archeology 0-100: 0.0 100-200: 0.0 Seen 12.2 Not Seen 0.0 Primary VQ0: M Recreation: RM
 Mass movement index: Low 0.0 Medium 0.4 High 11.8 Very High 0.0 Wetland 0.4 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Recommend at least partial log suspension during yarding on high landslide potential soils MMI=3 (BMP 13.9).
 NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll Inlet. Identified VQ0 is modification. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/10/95

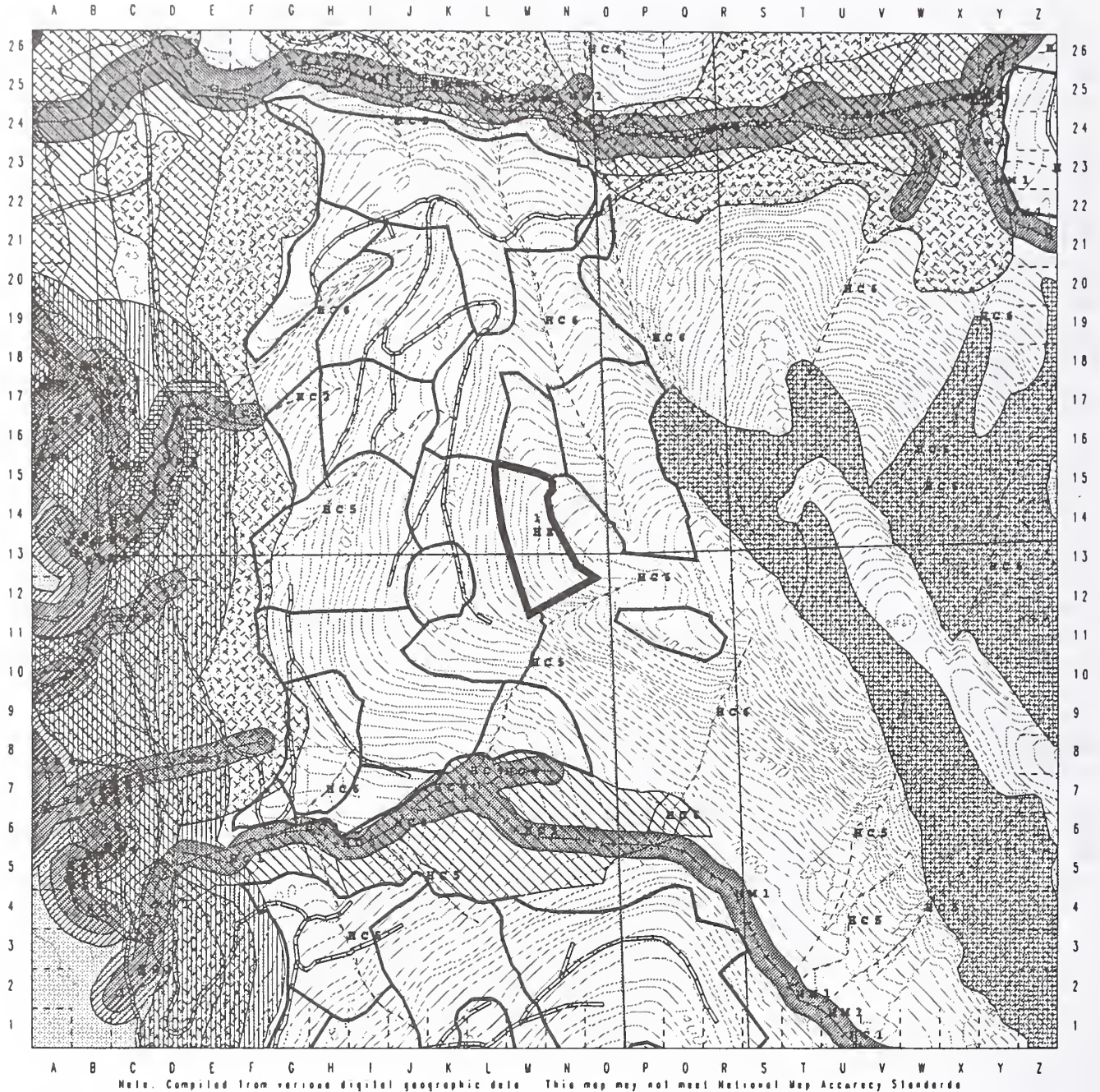
SILVICULTURE INPUT

High productivity with steep slopes. Apply shelterwood harvest system leaving all trees 13"DBH and smaller standing.
 CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 955 DEIS# 133

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u08/staff/uc/draftcord/dcl095 eml



Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Road
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 0
Volc 6 - 12.2
Volc 7 - 0
Total Acres - 12.2
Potential MBF - 552.1
Quarter Oad - KTHCSHE
VCU Number - 744
Phone Number - 1890-2
Alternative Pattern - 020000
★ Logging

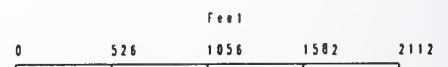
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stateplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 134 Planned Acres: 8.0 Estimated Volume: 323.4 In Alternatives: 0, 0, 0, 0
 Silvicultural System : Shelterwood Settings: 1 Quad: KTNC4NW Photo: 1673-161 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 956 Original LSTA Unit: 744-365

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 7.0 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: N
 Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 7.0 Class 7: 0.0 Low Productive 1.1
 Archeology 0-100: 0.0 100-200: 0.0 Seen 5.4 Not Seen 2.6 Primary VQO: M Recreation: RM
 Mass movement index: Low 0.0 Medium 1.7 High 6.3 Very High 0.0 Wetland 1.7 Mix Wetland 0.0
 % of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Recommend at least partial log suspension during yarding on high landslide potential soils MMI=3 (BMP 13.9).
 NRB 8/10/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Portion of unit may be seen from Carroll estuary. Identified VQO is modification. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/10/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/10/95

SILVICULTURE INPUT

Highly productive with areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 956 DEIS# 134

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s06/staff/uc/druficard/dcl095 omf



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

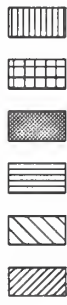


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 0
Volc 6 - 7
Volc 7 - 0
Total Acres - 8
Potential MBF - 323.4
Quarter Quad - KTHC5NE
VCU Number - 744
Photo Number - 1673-161
Alternative Pattern - 000000
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stock Line
SH Shovel Yarding

Projection - Stollplona



Eagle Nest

Feet
0 528 1056 1582 2112

Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 135 Planned Acres: 6.0 Estimated Volume: 271.0 In Alternatives: 0, 0, 0, 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1673-161 Logging systems: HE
Mgt Area: K32 VCU: 744 Watershed: D71A WAA: 406 NOI Unit: 957 Original LSTA Unit: 744-335

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 6.0 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.0 Aspect: SW
Volume class breakdown: Class 4: 0.0 Class 5: 0.0 Class 6: 6.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 6.0 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 0.0 Medium 0.1 High 5.9 Very High 0.0 Wetland 0.1 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit consists of high landslide potential soils (BMP 13.5). Helicopter yarding prescribed for this unit will provide full log suspension and minimize the risk of surface disturbance (BMP 13.9). NRB 8/28/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

There are no engineering mitigation measures anticipated for this unit.

FISH/WATERSHED INPUT

No concerns. NRB 8/28/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/28/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/28/95

SILVICULTURE INPUT

High productivity with areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 957 DEIS# 135

Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s08/stoll/ac/draftcord/act095 omi



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.

	Class 1 Stream		Beech or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slick Line
SH Shovel Yarding

Projection - Stoleplone

Volc 4 - 0
Volc 5 - 0
Volc 6 - 6
Volc 7 - 0
Total Acres - 8
Potential MBF - 271
Overlaid Quad - KTHC4HW
VCU Number - 744
Photo Number - 1673-161
Alternative Pattern - 000000
★ Logging



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 136 Planned Acres: 3.0 Estimated Volume: 82.5 In Alternatives: 0 . 0 . 0 . 0
Silvicultural System : Shelterwood Settings: 1 Quad: KTNC5NE Photo: 1890-1 Logging systems: HE
Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 958 Original LSTA Unit: 744-349

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 2.2 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.8 Aspect: W
Volume class breakdown: Class 4: 0.0 Class 5: 2.2 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 3.0 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 1.2 Medium 1.8 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 0% Martin- 0% Otter- 0% Eagle- 0% Black Bear- 0%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit contains high landslide potential soils, MMI=3. Prescribed helicopter yarding will minimize surface disturbance and landslide potential (BMPs 13.5, 13.9). NRB 8/24/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP14.7)

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95.

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting and feeding areas.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Shelterwood harvest will help mollify visual impact. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/24/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

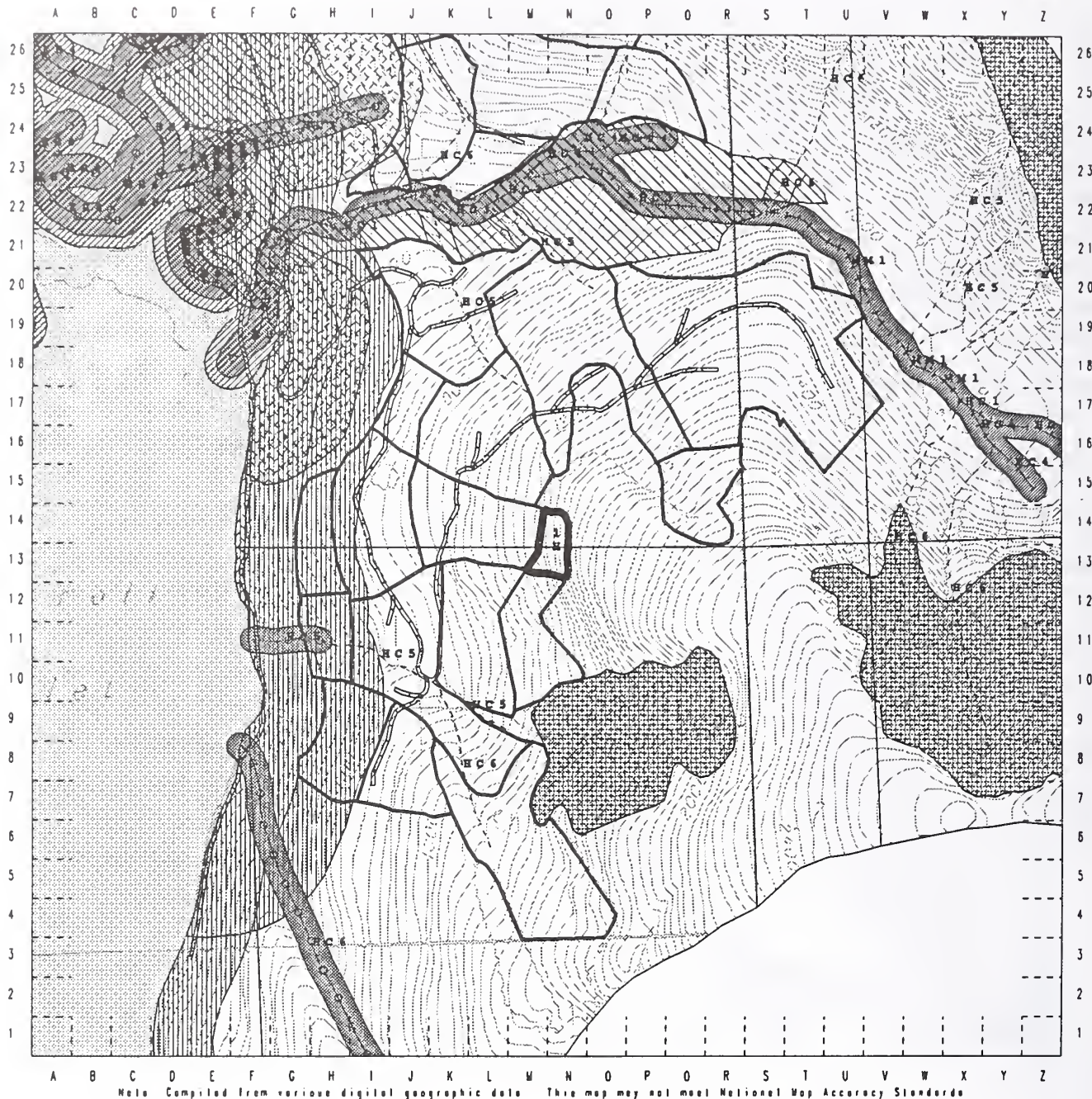
No concerns. NRB 8/24/95

SILVICULTURE INPUT

High productivity with areas of high elevation and high mass movement soils. Apply shelterwood system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 950 DEIS# 136

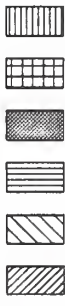
Mapscale 1:15840 (4 inch to Mile)
Created 11-4-95, /s06/staff/uc/draftcard/dcl095 aml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Roads
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beach or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Volc 4 - 0
Volc 5 - 2.2
Volc 6 - 0
Volc 7 - 0
Total Acres - 3
Potential MBF - 82.5
Georler Qood - KTHCSHE
VCU Number - 744
Photo Number - 1890-1
Alternative Patterns - 000000
★ Landing

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stolephone



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale

DEIS Unit: 137 Planned Acres: 10.5 Estimated Volume: 312.3 In Alternatives: 0, 0, 0, 0
 Silvicultural System: Shelterwood Settings: 1 Quad: KTNC4NW Photo: 1790-63 Logging systems: HE
 Mgt Area: K32 VCU: 744 Watershed: D72A WAA: 406 NOI Unit: 959 Original LSTA Unit: 744-354

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 8.6 Spruce 0.0 Mixed Hem/Spr 0.0 Nonforested 0.3 Aspect: W
 Volume class breakdown: Class 4: 0.0 Class 5: 8.6 Class 6: 0.0 Class 7: 0.0 Low Productive 1.6
 Archeology 0-100: 0.0 100-200: 0.0 Seen 10.5 Not Seen 0.0 Primary V00: M Recreation: SPNM
 Mass movement index: Low 0.0 Medium 10.4 High 0.0 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
 % of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
 Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Unit contains high landslide potential soils. Helicopter yarding will provide adequate suspension and minimize the potential for soil disturbance and landslides (BMPs 13.5, 13.9). NRB 8/24/95

TIMBER INPUT

Planned logging systems design for this unit is Helicopter.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential (BMP 14.7)

FISH/WATERSHED INPUT

No concerns. NRB 9/23/95

WILDLIFE INPUT

Harvest operations restricted to April 1 to October 31 to avoid trumpeter swan resting/feeding areas.

RECREATION / VISUALS INPUT

Unit may be visible from Carroll Inlet. Identified V00 is modification. Partial cutting will help to screen unit. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/24/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. 8/24/95

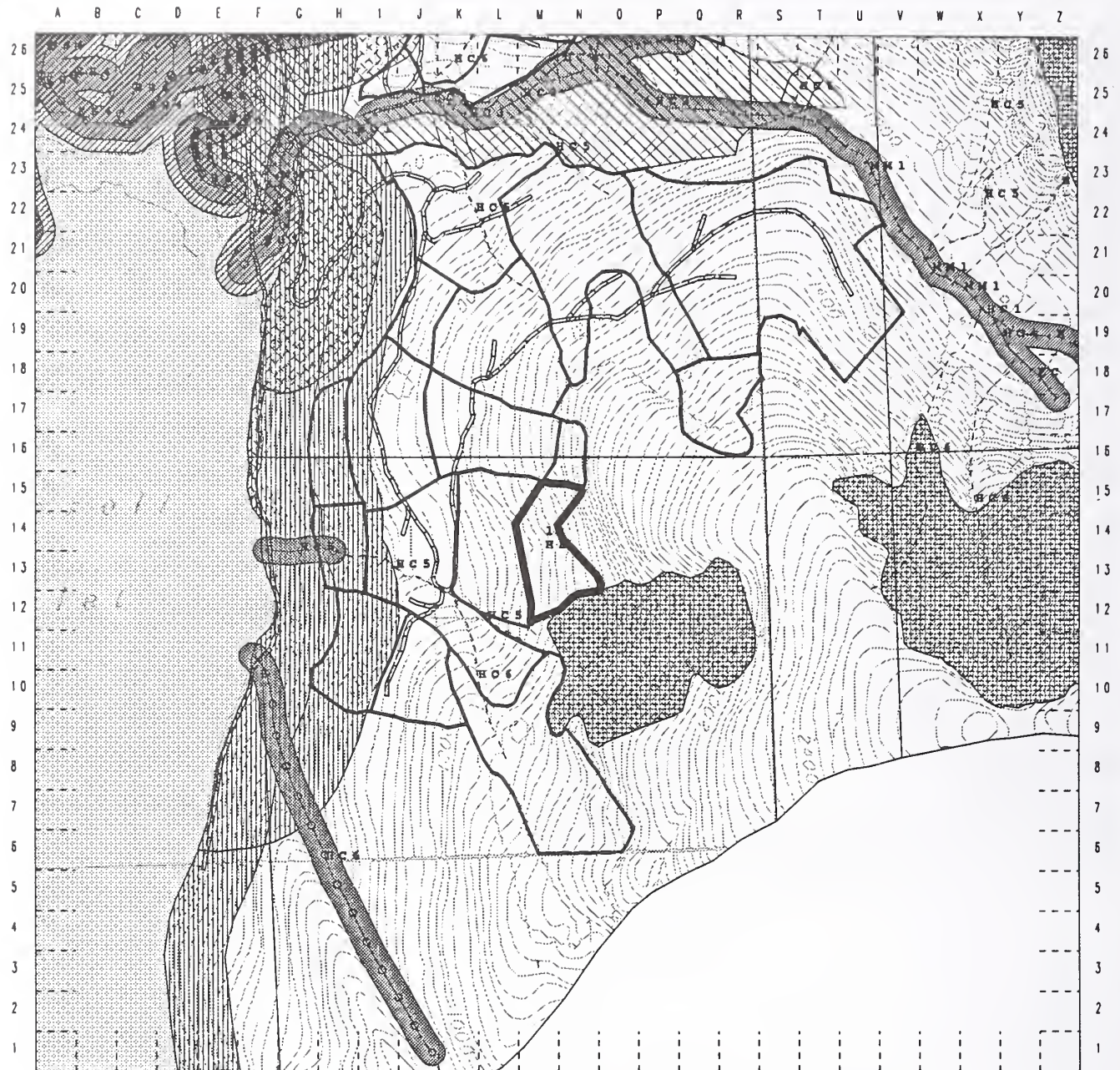
SILVICULTURE INPUT

High productivity with areas of high elevation and high mass movement soils. Apply shelterwood harvest system leaving all trees 13" DBH and under standing. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 959 DEIS# 137

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /u06/staff/uc/draftcard/dc1095.dml

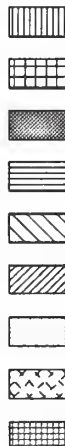


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards.



Class 1 Stream
Class 2 Stream
Class 3 Stream
Section Line
Planning Road
Unit Boundary
Setting Line
Other UC DEIS Unit Boundary
Contour or Ortho Line



Beech or Estuary Buffer
Private Land
No Cut Buffer
Partial or Selective Harvest Buffer
Riparian Soil Buffer
No Programmed Harvest Buffer
Body of Water
Prior Harvest
Mass Movement Index 4 Soil

Valc 4 - 0
Valc 5 - 8.6
Valc 6 - 0
Valc 7 - 0
Total Acres - 10.5
Potential MBF - 312.3
Quarter Quad - KTHC5NE
VCU Number - 744
Photo Number - 1790-83
Alternative Pattern - 000000
★ Landing

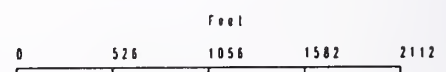
LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Slack Line
SH Shovel Yarding

Projection - Stoleplane



Eagle Nest



Upper Carroll DEIS - Unit Data Card - Plan/Layout/Sale
DEIS Unit: 138 Planned Acres: 30.7 Estimated Volume: 1,045.8 In Alternatives: 2, 3, 4, 5
Silvicultural System : Clearcut Settings: 3 Quad: KTNC5NE Photo: 1790-63 Logging systems: LS RS
Mgt Area: K32 VCU: 744 Watershed: D70C WAA: 406 NOI Unit: 960 Original LSTA Unit: 744-381

PHYSICAL DESCRIPTION

(Numbers are Acres unless otherwise noted)

Forest type: Cedar 0.0 Hemlock 0.0 Spruce 0.0 Mixed Hem/Spr 30.4 Nonforested 0.0 Aspect: NW
Volume class breakdown: Class 4: 0.0 Class 5: 30.1 Class 6: 0.0 Class 7: 0.0 Low Productive 0.0
Archeology 0-100: 0.0 100-200: 0.0 Seen 30.7 Not Seen 0.0 Primary VQO: M Recreation: SPNM
Mass movement index: Low 12.4 Medium 0.4 High 17.9 Very High 0.0 Wetland 0.0 Mix Wetland 0.0
% of High Value Habitat: Deer- 100% Martin- 100% Otter- 0% Eagle- 0% Black Bear- 100%
Data derived from digital geographic data. The coverages may not have met National Map Accuracy Standards.

SOILS INPUT

Southern half (M-12 to M-14) of harvest unit includes high landslide potential soils (BMP 13.5). Recommend at least partial log suspension when yarding to minimize soil surface disturbance (BMP 13.9). Area also includes rock cliffs that may limit yarding capability and cause blind leads. No concerns in the rest of the unit. NRB 8/24/95

TIMBER INPUT

Planned logging systems design for this unit is Running Skyline and Live Skyline. Confirm final road and landing locations.

ENGINEERING INPUT

High MMI soils. Road construction must minimize landslide potential. (BMP 14.7)
Oversteepened slopes may require full bench construction and endhaul of waste (BMP 14.7)
Steelhead/Coho/Pink/Chum timing (July 18 - August 7) may apply for all road construction and/or drainage installations.

FISH/WATERSHED INPUT

This unit has a Class I stream within the western unit boundary and will require a 100 foot TTRA buffer (BMP 12.6a)

WILDLIFE INPUT

No wildlife mitigation measures identified.

RECREATION / VISUALS INPUT

Unit may be seen from Carroll Inlet. Identified VQO is modification. Uncut timber in front of unit will help to screen views. WEA 9/30/95

LANDS INPUT

No concerns. NRB 8/24/95

CULTURAL RESOURCE INPUT

No cultural resources identified. RL 9/30/95

GEOLOGICAL INPUT

No concerns. NRB 8/24/95

SILVICULTURE INPUT

Moderate productivity with areas of high mass movement potential soil. Monitor need for planting. CBG 10/17/95

Upper Carroll Study Area Unit Schematic - Unit 960 DEIS# 130

Mapscale 1:15840 (4 inch to Mile)

Created 11-4-95, /s08/staff/uc/draftcard/dc1095.nml



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Note: Compiled from various digital geographic data. This map may not meet National Map Accuracy Standards

	Class 1 Stream		Beach or Estuary Buffer
	Class 2 Stream		Private Land
	Class 3 Stream		No Cut Buffer
	Section Line		Partial or Selective Harvest Buffer
	Planning Roads		Riparian Soil Buffer
	Unit Boundary		No Programmed Harvest Buffer
	Setting Line		Body of Water
	Other UC DEIS Unit Boundary		Prior Harvest
	Contour or Ortho Line		Mass Movement Index 4 Soil

LOGGING SYSTEMS Abbrev.

RS Running Skyline
HE Helicopter
HL High Lead
SL Stack Line
SH Shovel Yarding

Projection - Stateplane

Volc 4 - 0
Volc 5 - 30.1
Volc 6 - 0
Volc 7 - 0
Total Acres - 30.7
Potential MBF - 1045.8
Operator Code - KTHCSHE
VCU Number - 744
Photo Number - 1790-63
Alternative Pattern - 023450
★ Landing



Eagle Nest



APPENDIX K

Road Cards part 2

APPENDIX K

Road Design Cards

Access Management

The project area is isolated from other major road systems. Accordingly, only intermittent resource management and off-road vehicular and foot traffic is expected.

During resource management activity, the roads will be maintained commensurate with that activity. After completion of the management activity, the roads will revert to the following maintenance levels.

Maintenance level 1 roads are closed by bridge removal or organic encroachment and are monitored for resource protection.

Maintenance level 2 roads are maintained for high clearance vehicles and monitored for resource protection.

Accordingly, the road management strategy is as follows.

Main trunk roads will receive long-term access for forest administration such as future timber or salvage sales, fish pass access, and maintenance and traffic associated with special use permits. Such roads will remain open for high clearance vehicular traffic.

Several roads are expected to be used for long term cyclic forest administrative activities with minimal use expected for moderately long periods of time. Accordingly, such roads will be left open for high clearance vehicles. However, the entire road template will be seeded. This will include the road surface and the cut and fill slopes.

Seeding of the road bed is a technique to retard alder growth, achieve low maintenance costs, and reduce road reactivation costs when re-used for transporting forest products.

Numerous roads are expected to be used intermittently with long periods of non-use. Such roads will be allowed to revegetate naturally over time, resulting in eventual closure to vehicular traffic (organic closure). Modular bridges will be removed upon completion of harvest activities. Other drainage structures will be left in place.

Road Design Cards

The road cards display roads contained in alternatives 1 through 5 collectively. Accordingly, each alternative may or may not include all of, or portions of, each road displayed.

Some existing roads displayed on the road cards do not reflect stream crossings as drainage structure replacement was not anticipated. Should it be found necessary to replace structures on such roads, the structures will be reconstructed in accordance with pertinent BMPs and design standards as used for new facilities.

Due to map scale, road cards do not reflect many roads 1/4 mile and under. See Unit Cards for details concerning such roads.

The Road Card Appendix consists of three separate documents. They are:

- 1) Road Management Objectives
- 2) Definition of Traffic Service levels
- 3) Road Card Maps

UPPER CARROLL ACCESS MANAGEMENT
ROAD MANAGEMENT OBJECTIVES

Road Number	Traffic Service Level	Road Management Objectives	Existing or New Construction	Post Sale Maintenance Level	Method of Closure	Identified Stream Crossings			Fisheries Restrictions		Swan **	Remarks and/or Concerns
						I	II	III	T	P		
8000000	C	Open	E/C	2								
8000799	D	Close	E/C	1	Barrier	x	x	x	x	x	x	Rec access, admin. access
8000802	D	Close	E	1	Veg.							F&W, economics, no maint.
8300000	C	Open	C/E	2								Economics
8300790	D	Close	C	1	Barrier	x	x	x	x	x	x	Rec access, admin access
8300800	D	Close	C	1	Veg.							F&W, economics
8300820	D	Close	C	1	Veg.	x	x	x	x	x	x	Economics
8300825	D	Close	C	1	Veg.							Tributary to 8300800
8337000	D	Close	E	1	Veg	x	x	x				Tributary to 8300800
8337100	D	Close	E	1	Veg.							Economics
8340000	C	Open	E	2								Economics
8340100	D	Open	E	2								Rec access, admin. access
8400000	C	Open	E/C	2		x	x	x	x	x	x	Rec access, admin. access
8400500	D	Close	C	1	Veg.		x	x	x	x	x	Rec access, admin. access
8400550	D	Close	C	1	Veg.							Economics
8400600	D	Close	C	1	Veg.	x		x		x	x	Economics
8400610	D	Close	C	1	Veg.							Economics
8400615	D	Close	C	1	Veg.							Economics
8400620	D	Close	C	1	Veg.							Economics
8400630	D	Close	C	1	Veg.							Tributary to 8400600
8400640	D	Close	C	1	Veg.							Tributary to 8400600
8400700	D	Close	C	1	Veg.							Tributary to 8400600
8400705	D	Close	C	1	Veg.				x			Economics
8400707	D	Close	C	1	Veg.							Economics
8400800	D	Close	C	1	Veg.		x	x		x		Economics
8400801	D	Close	C	1	Veg.							Economics
8400810	D	Close	C	1	Veg.							Economics
8400820	D	Close	C	1	Veg.							Tributary to 8400800
8400850	D	Close	C	1	Veg.							Tributary to 8400800
8400900	D	Close	E/C	1	Veg.		x	x	x	x	x	Economics
8400920	D	Close	E/C	1	Veg.							Economics
8448000	D	Close	E/C	1	Veg	x	x	x	x	x	x	Tributary to 8400900
8448100	D	Close	C	1	Veg.	x	x	x	x	x	x	Post harvest bridge removal

* * Swan timing will apply to portions of these roads within 1/2 mile of the shoreline in the Carroll Creek es and the Neets Bay estuary.

UPPER CARROLL ACCESS MANAGEMENT
ROAD MANAGEMENT OBJECTIVES

Road Number	Traffic Service Level	Road Management Objectives	Existing or New Construction	Post Sale Maintenance Level	Method of Closure	Identified Stream Crossings			Fisheries Restrictions		Swan ** Timing	Remarks and/or Concerns
						I	II	III	T	P		
8448110	D	Close	C	1	Veg.			x				Tributary to 8448100
8448120	D	Close	C	1	Veg.			x				Tributary to 8448100
8448130	D	Close	C	1	Veg.			x				Tributary to 8448100
8448140	D	Close	C	1	Veg.			x				Tributary to 8448100
8448200	D	Close	C	1	Veg.		x	x	x			Tributary to 8448000
8448300	D	Close	C	1	Veg.			x				Tributary to 8448000
8450000	D	Close	C	1	Veg.			x				Economics, W/L protection
8450100	D	Close	C	1	Veg.	x	x	x	x			Tributary to 8450000
8450200	D	Close	C	1	Veg.		x	x	x			Tributary to 8450000
8450300	D	Close	C	1	Veg.	x	x	x	x			Tributary to 8450000
8460000	D	Close	C	1	Veg.			x	x			Economics
8460100	D	Close	C	1	Veg.		x	x	x			Tributary to 8460000
8460110	D	Close	C	1	Veg.			x				Tributary to 8460000
8460200	D	Close	C	1	Veg.			x				Tributary to 8460000
8460210	D	Close	C	1	Veg.			x				Tributary to 8460000
8460300	D	Close	C	1	Veg.			x				Tributary to 8460000
8460310	D	Close	C	1	Veg.			x				Tributary to 8460000
8470000	D	Close	C	1	Veg.		x	x				Economics
8470200	D	Close	C	1	Veg.			x				Tributary to 8470000

** Swan timing will apply to portions of these roads within 1/2 mile of the shoreline in the Carroll Creek es and the Neets Bay estuary.

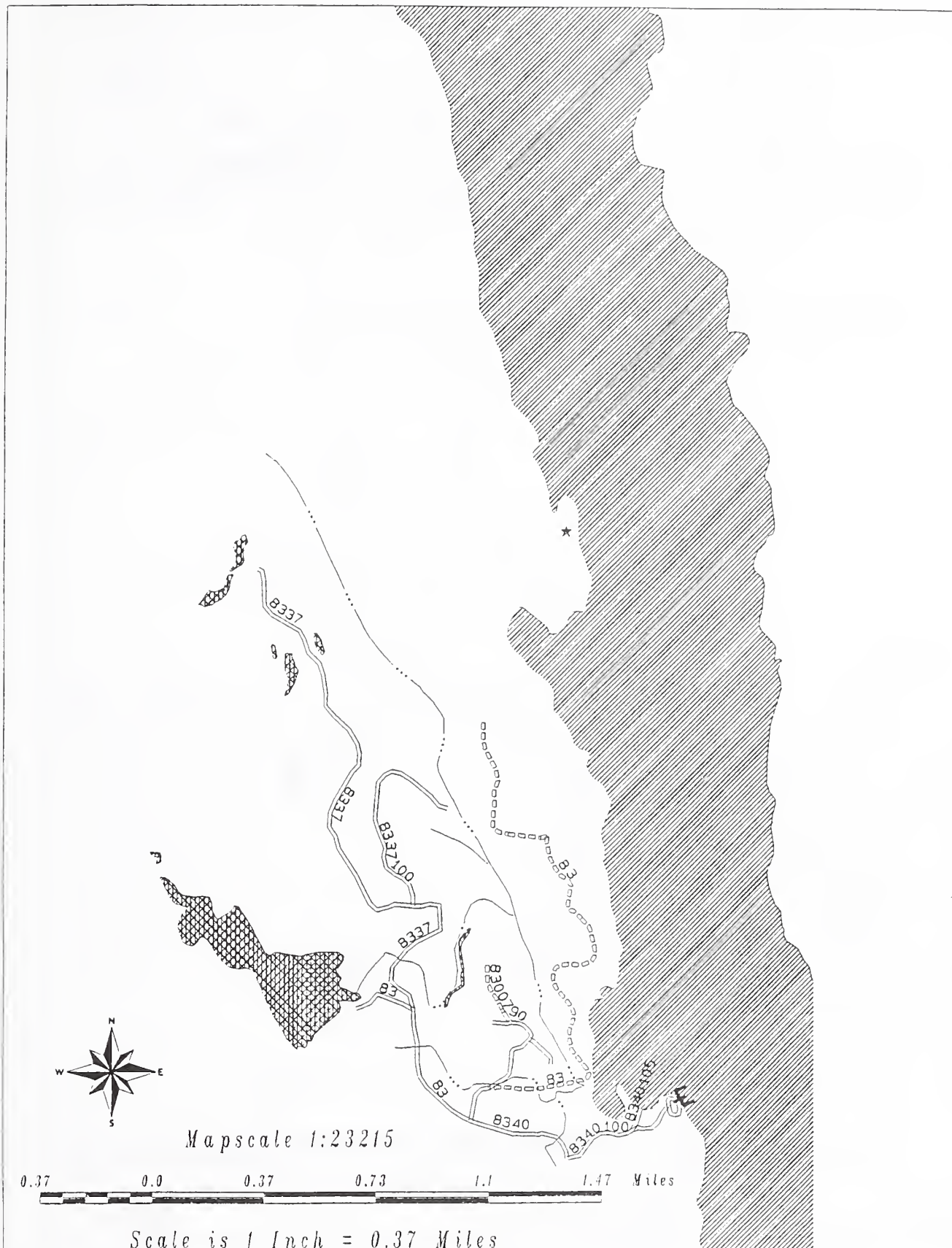
TRAFFIC SERVICE LEVELS

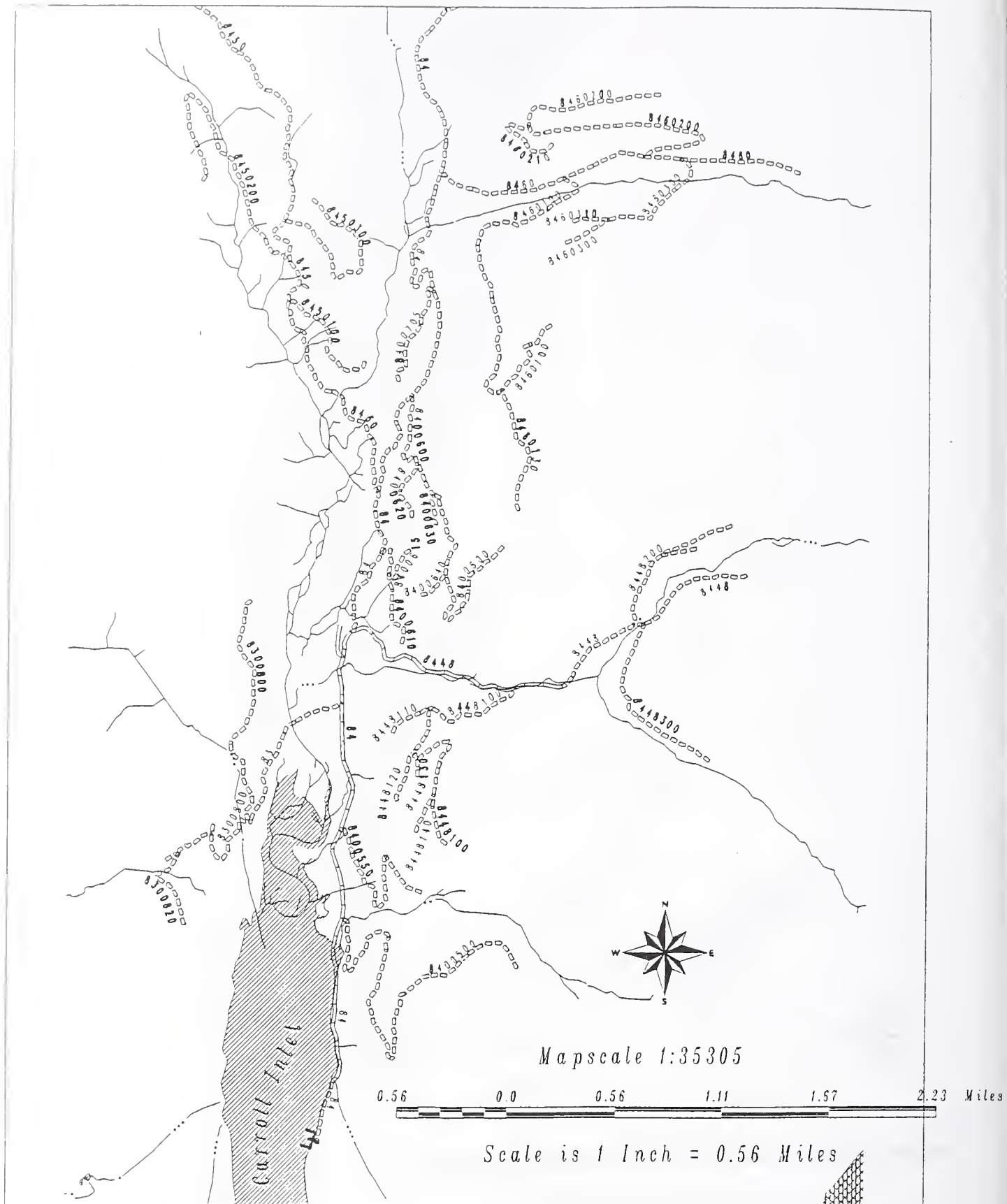
Traffic Service Levels. Traffic service levels (TSL) describe a road's significant traffic characteristics and operating conditions. The levels reflect a number of factors, such as speed, travel time, traffic interruptions, freedom to maneuver, safety, driver comfort, convenience, and operating cost. These factors, in turn, affect design elements, such as:

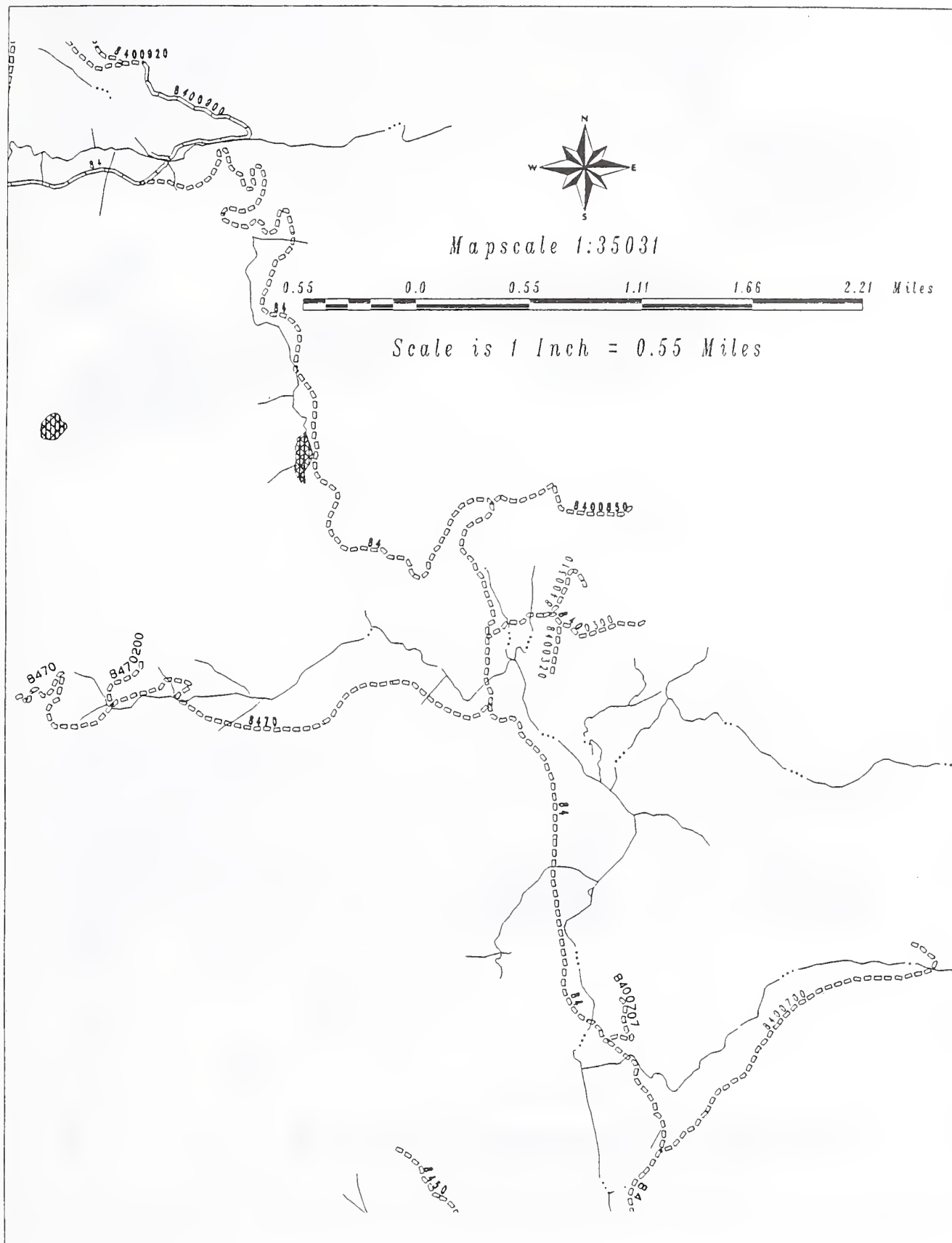
- a. Number of lanes.
- b. Turnout spacing.
- c. Lane widths.
- d. Type of driving surface.
- e. Sight distances.
- f. Design speed.
- g. Clearance.
- h. Horizontal and vertical alignment.
- i. Curve widening.
- j. Turnarounds.

The following table contains descriptions of the four different levels of traffic service for Forest roads.

A			B		C	D
Flow	free flowing with adequate passing facilities.	Congested during heavy traffic such as peak logging or recreation activities.	Interrupted by limited passing facilities, or slowed by the road condition	Flow is slow or may be blocked by an activity. Two way traffic is difficult and may require backing to pass.		
Volume	uncontrolled will accommodate the expected traffic volumes.	Occasionally controlled during heavy use periods.	Erratic; frequently controlled as the capacity is reached.	Intermittent and usually controlled. Volume is limited to that associated with the single purpose.		
Vehicle Types	Mixed; includes the critical vehicle and all vehicles normally found on public roads	Mixed; includes the critical vehicle and all vehicles normally found on public roads	Controlled mix; accommodates all vehicle types including the critical vehicle. Some use may be controlled to minimize conflicts between vehicle types.	Single use; not designed for mixed traffic. Some vehicles may not be able to negotiate Concurrent use between commercial and other traffic is restricted.		
Critical Vehicle	Clearances are adequate to allow free travel. Overload permits are required.	Traffic controls needed where clearances are marginal. Overload permits required.	Special provisions may be needed. Some vehicles will have difficulty negotiating some segments.	Some vehicles may not be able to negotiate. Loads may have to be off-loaded and walked into.		
Safety	Safety features are part of the design.	High priority in design Some protection is accomplished by traffic management.	Most protection is provided by traffic management.	The need for protection is minimized by low speed and strict traffic control.		
Traffic Management	Normally limited to regulatory, warning, and guide signs and permits.	Employed to reduce traffic volume and conflicts.	Traffic controls are frequently needed during periods of high use by the dominant resource activity.	Used to discourage or prohibit traffic other than that associated with the single purpose.		
User Costs	Minimize; transportation efficiency is important.	Generally higher than "A" because of slower speeds and increased delays	Not important; efficiency of travel may be traded for lower construction costs.	Not considered.		
Alignment	Design speed is predominant factor within feasible topographic limitations.	Influenced more strongly by topography than by speed and efficiency.	Generally dictated by topographic features and environmental factors. Design speeds are generally low.	Dictated by topography, environmental factors, and the design and critical vehicle limitations. Speed is not important.		
Road Surface	Stable and smooth with little or no dust, considering the normal season of use.	Stable for the pre-dominant traffic for the normal use season. Periodic dust control for heavy use or environmental reasons. Smoothness is commensurate with the design speed.	May not be stable under all traffic or weather conditions during normal use season. Surface rutting, roughness, and dust may be present but controlled for environmental or investment protection.	Rough and irregular. Travel with low clearance vehicles is difficult. Stable during dry conditions. Rutting and dusting controlled only for soil and water protection.		











Mapscale 1:37266

0.59 0.0 0.59 1.18 1.76 2.35 Miles

Scale is 1 Inch = 0.59 Miles



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